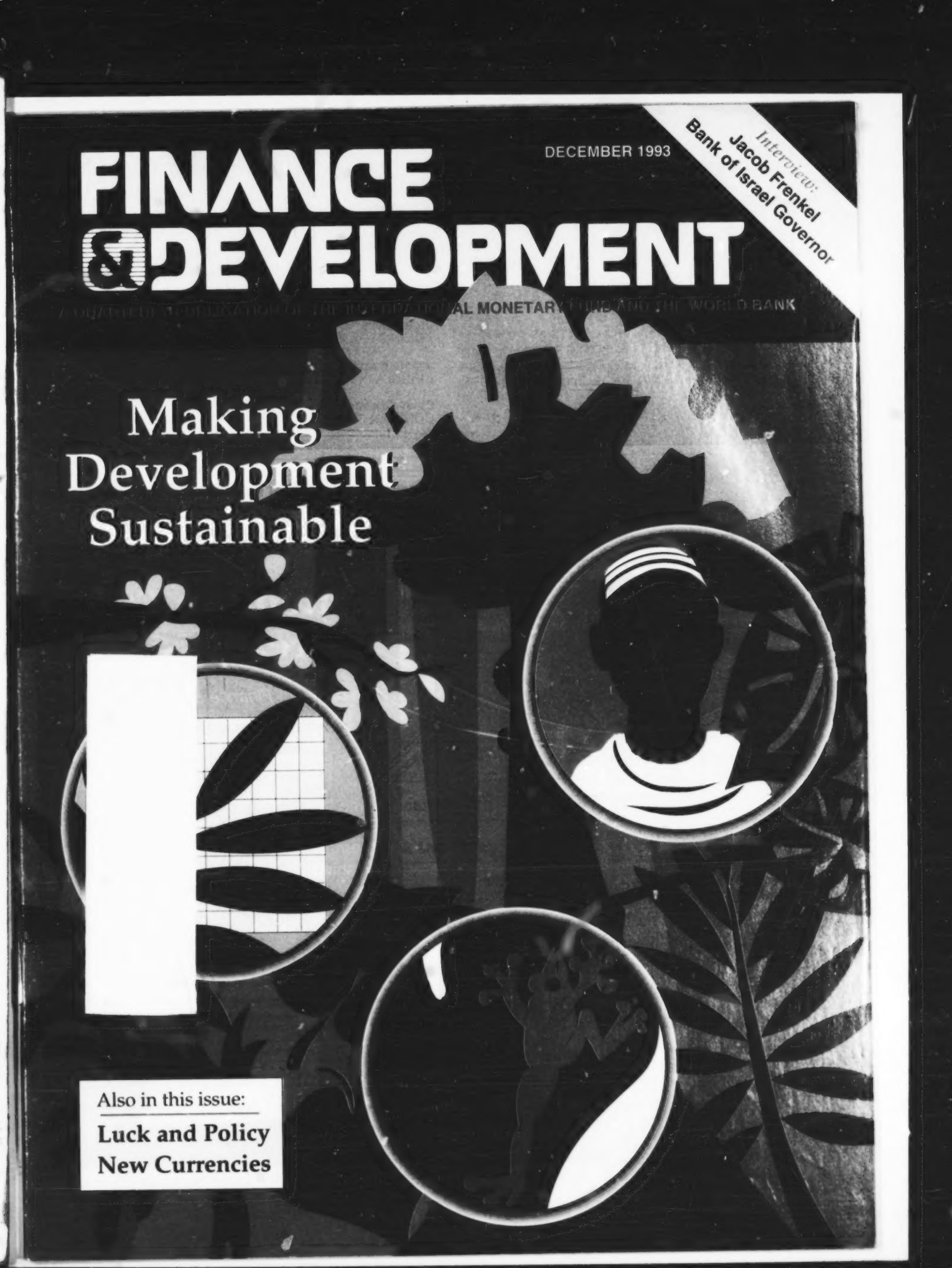
DECEMBER 1993

# FINANCE & DEVELOPMENT

A QUARTERLY PUBLICATION OF THE INTERNATIONAL MONETARY FUND AND THE WORLD BANK

*Interview:*
**Jacob Frenkel**
**Bank of Israel Governor**

## Making Development Sustainable



Also in this issue:

**Luck and Policy**
**New Currencies**

**FINANCE & DEVELOPMENT** is published quarterly in English, Arabic, Chinese, French, German, Portuguese, and Spanish by the International Monetary Fund and the International Bank for Reconstruction and Development, Washington, DC 20431, USA.

Opinions expressed in articles and other materials are those of the authors; they do not necessarily reflect IMF or Bank policy.

Second class postage is paid at Washington, DC and at additional mailing offices. English edition printed at Lancaster Press, Lancaster, PA. Postmaster: please send change of address to *Finance & Development*, 700 19th Street, NW, Washington, DC 20431. English edition ISSN 0015-1947.

Telephone: (202) 623-8300 • Fax Number: (202) 623-4738.

Laura Wallace
ACTING EDITOR

Gita Bhatt
EDITORIAL OFFICER

Luisa Watson
ART EDITOR

Martha Bonilla
EDITORIAL ASSISTANT

June Lavin
ADMINISTRATIVE ASSISTANT

Jessie Hamilton
CIRCULATION ASSISTANT

Emily Chalmers
CONTRIBUTING EDITOR

ADVISORS TO THE EDITOR

Masood Ahmed
Peter Clark
Richard Hemming
Naheed Kirmani
Pierre Landell-Mills
Anthony Lanyi
Johannes Linn
Gobind Nankani
Orlando Roncesvalles
Joanne Salop
Andrew Steer
Brian Stuart

## Our New Editor

**Claire C. Liuksila**, a UK national, is the new Editor. She was previously Deputy Division Chief in the IMF's Fiscal Affairs Department, and worked in Spain from 1980–85—including the Bank of Spain and Citibank Spain (Chief Economist). She has a BA from Vassar College, New York, and a PhD in Economics from Cambridge University, England.

Mrs. Liuksila replaces Pamela Bradley, who is now Division Chief in the IMF's Public Affairs Division, External Relations Department.

## Attention *F&D* readers!!!

The pages of *Finance & Development* are filled with a wide variety of topics and ideas. Let us know your thoughts on the views expressed.

Write to:
Editor, *Finance & Development*
International Monetary Fund
Washington, DC 20431 USA

FINANCE & DEVELOPMENT

December 1993 • Volume 30 • Number 4

A QUARTERLY PUBLICATION OF THE INTERNATIONAL MONETARY FUND AND THE WORLD BANK

Interview

**Top Economist Ponders a Changing World** — *Jacob Frenkel* — 2

Sustainable Development

**Making Development Sustainable** — *Ismail Serageldin* — 6

**Poverty and the Environment** — *Stephen Mink* — 8

**The Sociologist's Approach to Sustainable Development** — *Michael Cernea* — 11

**The Ecologist's Approach to Sustainable Development** — *Colin Rees* — 14

**The Economist's Approach to Sustainable Development** — *Mohan Munasinghe* — 16

**Measuring Environmentally Sustainable Development** — *Andrew Steer & Ernst Lutz* — 20

**Military Expenditures: Will the Post-1985 Decline Be Sustained?** — 24

**Introducing New National Currencies** — *Hernán Cortés-Douglas & Richard Abrams* — 26

**"Be Ready To Be Blamed for Everything": How Latvia Introduced Its Currency** — *Einars Repse* — 28

**Interest Rate Policies in Developing Countries** — *Abbas Mirakhor & Delano Villanueva* — 31

**Policy Coordination: How Is It Affected by Uncertainty?** — *Paul Masson* — 34

**The Determinants of Economic Success: Luck and Policy** — *William Easterly & Lant Pritchett* — 38

**National Perspective Studies in Africa: A Vision of a Better Future** — *Pierre Landell-Mills* — 42

**Organizing Tropical Disease Control** — *Bernhard Liese & Paramjit Sachdeva* — 44

Books

*An Inquiry Into Well-Being and Destitution* by Partha Dasgupta — *Vinod Thomas* — 47

*India In Transition: Freeing the Economy* by Jagdish Bhagwati — *Anand Chandavarkar* — 48

*The Economics of Middle East Peace: Views from the Region* edited by Stanley Fischer, Dani Rodrik, and Elias Tuma — *Robert A. Mertz* — 48

*Singular Europe: Economy and Polity of the European Community After 1992* edited by William James Adams and *The European Community and the Developing Countries* by Enzo R. Grilli — *Sara Kane* — 49

*On Exchange Rates* by Jeffrey A. Frankel — *Jonathan D. Ostry* — 50

*Reviving Private Investment in Developing Countries* edited by A. Chhibber, M. Dailami, and N. Shafik — *Eugene M. Salorio* — 50

Books in Brief — 51

Letters — 52

Index 1993 — 53

*The Editor welcomes views and comments from readers on the contents of the journal. The contents of* Finance & Development *may be quoted or reproduced without further permission. Due acknowledgement is requested.*

READEX
FICHE

# Top Economist Ponders a Changing World

*Jacob A. Frenkel, Governor of the Bank of Israel, shares with* Finance & Development *his reflections on the new opening for peace in the Middle East, disruptions in the exchange markets, and other events in the world economy.*

## Middle East

***What will be the overall economic ramifications of the recent peace agreement with the Palestinians?***

I believe that the peace process and the agreement with the Palestinians will have significant positive implications for the economies of both Israel and the territories. Of course, I am hopeful that this process will extend beyond the agreement, so that the entire region will benefit once the peace process becomes more comprehensive.

As far as the territories are concerned, I expect to see a multiyear effort of a fundamental nature to rehabilitate the economic infrastructure in the territories—roads, transportation systems, electricity, water, solid waste disposal, sewerage, health, social services, and the like. This will be essential to attract private investment. As for Israel, the main benefit will be the creation of an atmosphere that projects more stability, in the geopolitical sense. I expect investment to increase significantly within Israel, emanating both from domestic and foreign investors.

***Do you think the Palestinians should introduce their own currency?***

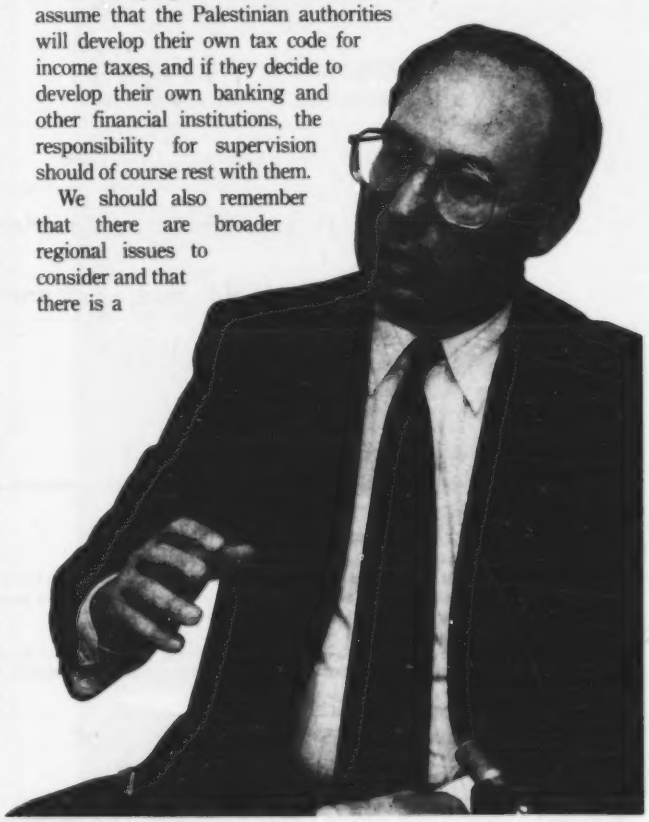
The negotiations on these technical matters have not yet started. But if I were asked for my professional advice—speaking now as an economist—I would advise them to continue using during the "transitional phase" either the [Jordanian] dinar or the [Israeli] shekel, or both, as legal tenders. I say this because time and again we have seen examples of entities that were eager to introduce their own currency as a political symbol, but with disastrous results, because they lose monetary stability, which is essential for the promotion of growth.

***What will be the scope for regional arrangements in trade and finance?***

Since the two economies have been intertwined for many years—for example, a very large fraction of the Palestinian labor force in the territories [about one third] finds employment within Israel—I would expect a significant number of Palestinian workers to continue to find employment within Israel and Israel to continue to provide them with employment during the 5-year transitional phase.

By the same token, most goods and services should be exchangeable on the basis of free trade principles subject to compliance with the conventional standards of safety, health, and the like. Of course, there might be some areas that require special arrangements and negotiations, such as agriculture, in order to manage trade during the transitional period, but by and large the philosophy should be one of relying on free market mechanisms. I assume that the Palestinian authorities will develop their own tax code for income taxes, and if they decide to develop their own banking and other financial institutions, the responsibility for supervision should of course rest with them.

We should also remember that there are broader regional issues to consider and that there is a



multilateral track to the peace process. As chairman of the Israeli delegation to the multilateral peace talks dealing with regional economic development, I can tell you that there are quite a lot of promising projects of a regional nature. Some examples include projects in the area of tourism, where the region has a lot to offer—antiquities, religious sites, climate, and the like. And there is no question in my mind that the potential is far from being exhausted.

By the same token, there are some other more ambitious regional projects under discussion—linking electricity grids, the construction of regional highway transportation systems, the digging of canals linking the Red Sea and the Dead Sea as well as the Mediterranean and the Dead Sea, and making good use of our limited water resources. This last item recognizes the advanced technology Israel has developed in drip irrigation, a technology that Israel will be more than delighted to share with its neighbors. It also recognizes the fact that we have both arid and semi-arid zones in a region with limited water supply, meaning a more effective and efficient use of water would provide high social returns to all inhabitants.

***Are we talking about joint ventures in infrastructure?***

I think these economic activities—which will be a major engine of development in the territories—will be initiated, administered, and managed by the Palestinians themselves. Of course, I can envisage a situation in which cooperation with Israel would take place, whether it is in terms of joint ventures or subcontracting. The key thing to remember is that Israel is genuinely interested in seeing the economic situation in the territories improve significantly, because everyone recognizes that economic stability is necessary to secure the fruits of the political track of the peace process.

***What do you see as the virtues of a customs union versus a free trade area?***

Serious consideration should be given to the possibility of forming a customs union between Israel and the territories. The economies are closely intertwined at the present time, and I can envisage a situation in which there is practically free trade between the two economies with identical and unified external tariffs to the extent needed.

***How about institution building?***

One of the most important efforts in the early phases should be institution building—like tax administration and financial intermediation, which help transform savings into investment. If the Palestinian authorities wish to have the capacity to manage their public finances without having to resort to and be dependent upon foreign aid, they will need to have their own functioning tax system. In these areas, technical assistance from the IMF and the World Bank would be essential.

***What is the role and potential for capital flows to the region from both public and private sources? Will there be aid creation or aid diversion?***

Recently, we have seen a variety of estimates of the financing needs of the region, but I am most familiar with the serious, highly professional study done by the World Bank. The Bank's estimate is that over the next decade, we will need to see an increase of about $3 billion in public sector investment needs, primarily in areas related to infrastructure.

As these resources are mobilized, it is important that they catalyze, more than crowd out, private sector investments. We must also make sure that the territories have an institutional infrastructure capable of properly receiving, disbursing, monitoring, and allocating these resources. One note of caution, however, on the absorptive capacity of the territories. I have also heard much larger estimates on the financing needs, and we should keep in mind that it is much easier to throw numbers in the air than to substantiate them.

***Since the IMF normally provides a complete range of services only for countries with full membership, what can be done in the special case of the territories during the 5-year transitional period?***

Israel is keen to see that the autonomy in the territories is associated with the relevant institution building and independent capacity to manage the economy of the territories. We expect that for the transitional phase the links between the IMF and the territories would be coordinated with Israel, and Israel, on its part will, of course, cooperate to facilitate this endeavor.

## States of the former USSR

***What are the key lessons to be learned in light of the recent turmoil?***

First, that economic transformation is an extremely long journey and that one should not expect immediate results. One of the tragedies has been that the courageous populations of these countries have not always been told clearly that the process is going to be lengthy and that there will be hardship during the transitional period. There were unrealistic expectations for an immediate turnaround.

Second, that the process of transformation needs broad-based political support. For this, the process must be transparent. The public must understand the objectives and accept that the alternatives are worse.

Third, no country these days can operate as an isolated island. It is important that as we launch these reform efforts, the products of these countries are given broad access to foreign markets. This is clearly the responsibility of the industrialized countries.

Fourth, it is essential that early on, a functioning tax system is put in place. It will contribute to responsible budgetary policies, rather than ones that resort to inflationary finance, or rely excessively on foreign aid, which will undercut the entire process.

Fifth, currency convertibility has become a symbol. It is critical that economic measures like currency convertibility for capital movements are motivated by economic needs and considerations, not by the urge to undertake political symbolism.

Sixth, one must ensure that an environment of macroeconomic stability is in place within the context of free trade before opening up completely the capital account of the balance of payments, or stability may be undercut.

Seventh, it is very difficult to begin a multiyear effort to restructure in an environment of price instability. It is therefore imperative that early on, macroeconomic stability is restored and inflation brought under control.

Eighth, many of these economies have not had the basic institutions needed to support a market regime: well-defined property rights, bankruptcy laws to enable money-losing enterprises to go out of business, a functioning tax system, and operational goals that encourage hard budget constraints rather than soft budget constraints and inflation.

In short, the process of transformation, which is a long-term process, must be based on broad political support that, in turn, can only be generated if there is a high degree of understanding of the process itself. We must also remember that it is the weak members of the population who are likely to be most heavily burdened. Thus, it is essential that society provide the appropriate safety nets to safeguard the very poor from excessive hardship. But while doing so, it should make sure that these safety nets are budgeted properly.

## European Exchange Rate Mechanism

***What have we learned about the ERM from the crises of the past year or so?***

When there is a high degree of integration of world capital markets, one should be ready to see huge flows of money that move very

rapidly from one currency into another. This means that intervening in the foreign exchange market can be like standing in the way of an avalanche: it can be extremely difficult to resist market pressure if the market believes that this is where things should go. As a result, if you really have a high degree of capital mobility, and you also want to maintain an ERM with a narrow band, you must make sure that there is a very high degree of convergence of economic performance, especially in the area of prices.

***Does this mean the old ERM structure—with much tighter bands than currently exist—is necessary for European economic integration?***

We should recognize that there are two parallel objectives. One is to achieve the benefits of an integrated market—benefits that are maximized in the context of free trade, benefits that in and of themselves do not require a single currency. They require freedom of trade. The other objective is stability—convergence of price developments and the like. Such developments can indeed be aided by (and lead to) exchange rate stability. And if there is no convergence of price developments, budgetary developments, and the like, then it will be very difficult to maintain a single currency or a very tight band around the reference rate.

***How will the ERM turmoil of the past year affect developing countries?***

Here the link is not immediate except to note that there is a grave danger of protectionism that emanates from the frustration of policymakers at their inability to bring about exchange rate stability. If indeed protectionism is on the rise, it will be a disaster for the developing countries. The greatest contribution that the industrial world can make is to open up their own markets to the products of developing countries. Doing this will not impose any budgetary cost on the industrial countries, and it will facilitate integration of the world economic system.

## Highlights of Governor Frenkel's career

- Appointed Governor of the Bank of Israel (1991)
- Current Co-Chairman of the Israeli delegation to the multilateral peace talks on regional economic development
- IMF Economic Counsellor and Director of Research (1987–91)
- Prior to joining the IMF, taught for many years at the University of Chicago, where he was the David Rockefeller Professor of International Economics, and recently rejoined the faculty of Tel-Aviv University
- Holds a BA in economics and political science from the Hebrew University of Jerusalem, and an MA and PhD in Economics from the University of Chicago

## Bretton Woods

***If the IMF were created now, as opposed to 50 years ago, what form would you have it take?***

Having moved to the other side of the fence, namely the position of governor of a member country rather than that of a Fund staffer who deals with a member country, I have learned to appreciate more and more the unique role that IMF surveillance [consultation] plays in improving the professional climate within which national economic policy debates take place. In Israel we have found the Article IV [annual consultation] visits of the Fund to be extremely useful.

If I can extrapolate from our own experience, I only hope that we can find a way to strengthen the role of the Fund as the major source of surveillance and policy advice to member countries. In recent years, some commentators have increasingly viewed the Fund's role as a provider of financial resources. Of course, I believe this is a very important function, but in my judgement, it should not be viewed as the main function. The provision of financial resources is important to the extent that it catalyzes other private resources and strengthens the Fund's ability to implement its surveillance functions and offer effective policy advice.

***Now that you are on the other side of the fence, what do you think about the criticisms sometimes made of the IMF's adjustment programs?***

Nobody on the outside fully realizes the immense task the IMF is undertaking, and the amount of professionalism, dedication, and knowledge of the IMF staff. But the fact is that in many cases programs go off track. And when you look at the reasons why, it is often that the economic policies prescribed were not fully implemented. But in recent years, there have been additional reasons, especially in Eastern Europe. Certainly, the external environment facing the countries undergoing economic reforms has changed dramatically. The collapse of the trading system is a key element that program designers could not have taken fully into account.

So if we have learned one important thing, it is that one should never have overoptimistic expectations. I would always start by saying that things will probably be worse than they are, rather than being more optimistic, because then the cost of a mistake is less. When you launch an adjustment program, you need to have political support, which is essential for staying power. But to have staying power, you need to avoid frustrations, and to avoid frustrations, you need to make sure that expectations are not excessive.

***What about the case of Israel and its budget deficit? The IMF has long advocated reducing budget deficits, and now you are advocating a modest deficit because of all the Soviet immigrants?***

For me, it is much more important to have information about the structure of the deficit, the composition of government spending, and the composition of taxation than just information about the difference between government expenditures and government revenues.

This does not mean that I am sanguine or relaxed about the budget deficit. I definitely would like to see a credible path of budgetary control. However, what matters to me is that people do not just talk about the deficit, but that they also talk about the composition of expenditures and revenues. If governments are taught to cut spending, and they cut from transfer payments, that is one thing; if they cut from infrastructure investment, that could be disastrous. As far as Israel is concerned, we have adopted a multiyear trajectory of budget deficit reduction—in this context, the budget deficit for 1993 should not exceed 3.2 percent of GDP.

***Overall, how is the Israeli economy doing?***

I am very pleased with the overall development of the Israeli economy. In 1991, real GDP grew by 6.2 percent, and in 1992, by 6.6 percent. Business sector growth was even higher, reaching 7.6 percent in 1991 and 7.9 percent in 1992. This year, 1993, is a year of transition, reflecting a drastic shift of government spending from construction toward education and infrastructure investment. While growth of our housing sector will decline, our business sector, excluding housing, will continue expanding at about 8 percent. Population will continue to grow in 1993 by about 3 percent, while the growth of the number of jobs will be higher. As a result, the unemployment rate will decline from 11.2 percent in 1992 to 10 percent this year. This positive development will take place against the background of a reduced inflation rate, a stable foreign exchange market, a continuation of the double-digit growth of exports, a further reduction in the budget deficit, a

continuation of the multiyear trade liberalization program, and an acceleration of privatization.

Israel's growth performance is especially noteworthy compared with the rate of growth in industrial countries, currently projected to be about 1.1 percent in 1993, while the European Community is projected to decline by 0.2 percent. Also, the new momentum to the peace process should give an added boost to the Israeli economy.

***What advice do you have for the Bretton Woods institutions in the 1990s?***

The Bretton Woods institutions today face an extraordinary challenge, because they have to reconcile two parallel trends that have emerged in the world since their creation. On the one hand, especially now with the states of the former USSR and countries in Eastern Europe having become members, they have become truly global and universal in their nature. Yet at the same time, a process of regionalization has taken place. Europe is more cohesive, notwithstanding last year's currency crisis. We have groupings like the G-7 [Group of 7 major industrial countries]. We have other types of groupings. We have free trade arrangements within regions—for example, the move toward the adoption of NAFTA [North American Free Trade Agreement]. Capital markets are global, requiring a global perspective. Yet interests are, on occasion, regional, encouraging regional perspectives. The challenge is how to make the best of both processes. In this regard, there can be no substitute for strengthened cooperation and coordination among economic policymakers.

## Personal reflections

***What views do you hold now as a central banker that are different from those you held as a research economist and an academic?***

I would not say that there has been a dramatic change in my views, because over the years, particularly while I was at the IMF, I had a lot of contact with central bankers and, therefore, a good appreciation of their tasks. But you could say that my job as a central banker in Israel has meant my dealing with a much broader range of issues than I might have expected. As a result, I have come to realize that successful central banking requires strong support from fiscal policies and structural reform. In that sense I am fortunate, because in Israel, the Governor of the Bank of Israel is also the Chief Economic Advisor of the Government and in that capacity, he can contribute to the formation of a broad range of economic policy measures.

***Have your views changed at all on the pros and cons of an independent central bank?***

If anything, I have become much more extreme in insisting that it is essential to have an independent central bank, as we have in Israel. Time and time again, I see how important it is to have a long-term perspective in the conduct of monetary policy, as there are daily political pressures that may induce a central bank that is not independent to depart from this perspective. "Steady-as-you-go" and "no superficial fine-tuning" are two key principles essential for economic stability—principles that are hard to adopt unless you have an independent central bank. The bottom line is that countries that have managed to have independent central banks have generally shown a better inflation performance.

***By taking on this new job, you have lost the comfort of having the time to research solutions. What is the balance now between intuition and rigor?***

I do not want to sound too self-serving, but coming to this operational job after so many years of research makes intuition also rigorous. The issue is not so much a choice between rigor and intuition, but rather how well-founded on rigor is your intuition. By and large we do not have time to start reflecting on creation. We have to make fast decisions, especially if the foreign exchange market is involved. If policy is run correctly, there is less need for "stop-and-go" policies or for "fine-tuning."

***In academic circles, you were talking to your peers. Now you are talking to politicians. What types of difficulties are you running into in getting your messages across?***

What has become clear and what some of my former academic colleagues may not always appreciate is that economic policy is not made in a political vacuum. What might be the optimal policy recommendation in the abstract may therefore not be the policy recommendation that is feasible and appropriate given other constraints.

I am not saying that economic policy recommendations should yield to political constraints. On the contrary, there has to be interaction. On the one hand, there are political realities within which you are trying to find the best policies. You have to remember all the time that the worst enemy of the second best policy may be the first best, and that if you persist in rigidly pressing for the first best, even when it is not feasible, you may end up with the third and fourth best outcomes. Moreover, you are engaged day-to-day in an educational task of explaining to the politicians the economic realities—that not everything can be legislated and that market forces are overwhelming. The effectiveness of this educational task hinges on the prestige and credibility of the "educator," which in turn depends heavily on his own track record.

***Looking back at your first two years as central bank governor, what do you see as your main successes?***

Speaking as a central banker, my greatest area of success has been on the inflation front. For the six years (1986–91) following our stabilization program of 1985, Israel's inflation had been around 18 percent per annum, and during my two years in office, it has been cut almost by half. However, I should indicate that as long as our inflation rate exceeds the one prevailing in our major trading partners, we will be at a disadvantage in international competition. Thus, we will continue in a vigilant way to fight inflation, and I hope that within two or three years we will be able to converge on the lower level prevailing in our trading partners. An additional source of satisfaction is the performance of the exchange rate policy that we adopted in December 1991. This policy of a "crawling band" enabled us to lower inflation while maintaining and even improving the competitiveness of our exports—an especially noteworthy achievement given the recent turmoil in the markets associated with the European ERM.

Speaking as a broader economic policymaker, I am pleased with our record on absorbing a major influx of immigrants into Israel—an influx that has increased our population by about 15 percent in less than three years—without increasing our unemployment rate significantly. The strategy has been to absorb these immigrants through the private sector without bloating the public sector.

***Any disappointments?***

The main disappointment is that I would like to have seen the process of privatization move much faster than it has, although in recent months a significant acceleration has taken place. My main hope is that we will continue along this more encouraging track.

***Looking forward, what do you hope to accomplish in the next few years?***

If I could single out several objectives, I would say: (1) further lowering the inflation rate; (2) sticking seriously to the goal of trade liberalization under the more general objective of internationalization of the Israeli economy—an objective that encompasses the notion of openness, transparency, and involvement in the world economic system; (3) an accelerated program of privatization, of both public enterprises and the banks; and (4) contributing in the best possible way to the development of an economic strategy commensurate with the peace process. ■

Eighteen months after the Rio "Earth Summit," what have we learned about how to implement development that is sustainable, and what conceptual and methodological issues remain to be resolved? In the five articles that follow, *Finance & Development* tries to capture the World Bank's thinking on these issues. The overview piece, by the head of the Bank's newly created Vice Presidency for Environmentally Sustainable Development, stresses the need to broaden our concept of development by integrating the approaches of sociologists, ecologists, and economists. The succeeding three articles present each of these views, and the final article examines recent strides in measuring progress toward environmentally sustainable development.

# Making Development Sustainable

ISMAIL SERAGELDIN

***THE 1992 "Earth Summit" succeeded in alerting the conscience of the world to the urgency of achieving environmentally sustainable development. We know enough to act today, but we must also find answers to the many tough conceptual and technical questions that remain.***

As last year's "Earth Summit" in Rio de Janeiro drew to a close, its message to the world became clear: without better environmental stewardship, development will be undermined, and without accelerated development in poor countries, environmental policies will fail. The evidence is all around us. In sub-Saharan Africa, "slash and burn" approaches to agriculture—in the face of rising population growth—are creating vicious cycles of soil degradation and impaired productivity. In cities like São Paulo, Mexico City, and Bangkok, the polluted air and water are posing a serious health threat. Industrial country emissions of greenhouse gases—threatening a 2–4° centigrade rise in global temperatures over the next century—show little sign of abatement.

Rio was a signal to the world that after decades of pitting environmental quality against economic growth, policymakers are finally becoming aware of the crucial and potentially positive link between the two. Humanity must learn to live within the limitations of the physical environment as both a provider of inputs and a "sink" for waste. We must recognize that even if environmental degradation does not reach life-threatening levels, it can result in a significant decline in the quality of the world we live in. We must face our responsibilities to other species and the need to protect biodiversity. We must find a way to enable all people, now and in the future, to enjoy clean water, clean air, and fertile soils.

But basic as these concerns may seem, the world today faces a tremendous backlog in providing these basic amenities to the poor and disadvantaged. One billion people—mostly in developing countries—do not have access to clean water, 1.7 billion people do not have access to sanitation, and 2–3 million children die annually because of diseases associated with this lack of water and sanitation. To this situation, we are adding about 90 million people to the global population every year—again, mostly in developing countries. This raises huge challenges for policymakers as they seek to reconcile the needs and aspirations of the growing population with the limitations of the natural world. Three particular challenges stand out:

***Food production.*** As the world's population expands to 9 billion over the next 40 years, food consumption will double. Even though the required rate of growth of food production—1.6 percent per year—will be less than the 2 percent achieved for the past three decades, agronomists agree that the task is likely to be much more difficult, since many of the sources of earlier growth are no longer available. Two options now exist: intensifying production on land already in use, and expanding into new areas. In the past three decades, intensification has dominated, accounting for over 90 percent of agricultural growth. Whether a new "green revolution" will be able to repeat the remarkable gains in yields is highly uncertain. The challenge will be not only to raise yields but to do so in a

less damaging way than in the past. Already, the environmental problems of intensification (chemical and biological runoff, water logging, salinization, and the like) are serious in some areas and, without better policies, will get much worse.

***Urbanization and pollution.*** Ninety percent of the world's increased population will be located in urban areas, posing formidable problems of social and institutional change, infrastructure investment, and pollution control. Already many municipal authorities are overwhelmed by their current responsibilities—yet the task ahead will only increase. Making clean water available to everybody in the next 40 years will require extending service to 3.7 billion more urban residents. And preventing pollution from worsening in some fast-growing countries will require that pollution per unit of industrial output fall by 90 percent between now and 2030.

***Human encroachment.*** As human numbers and the scale of their activities increase, so does the pressure on fragile ecosystems. In the past decade, 7–10 percent of tropical forests and wetlands have been destroyed, important aquifers have been depleted, and coastal zones have been polluted at an unprecedented rate. We now know that income growth need not cause these problems and can help reduce them. But without better policies, the coming decades will witness even worse damage.

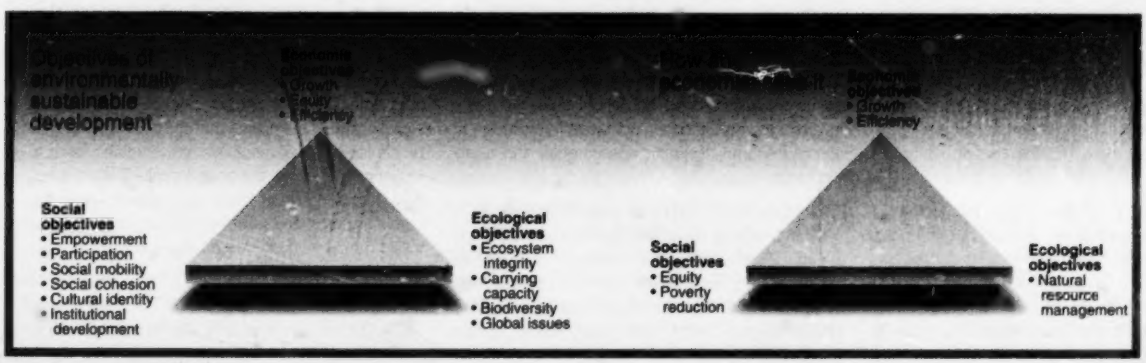
## "Sustainable development"

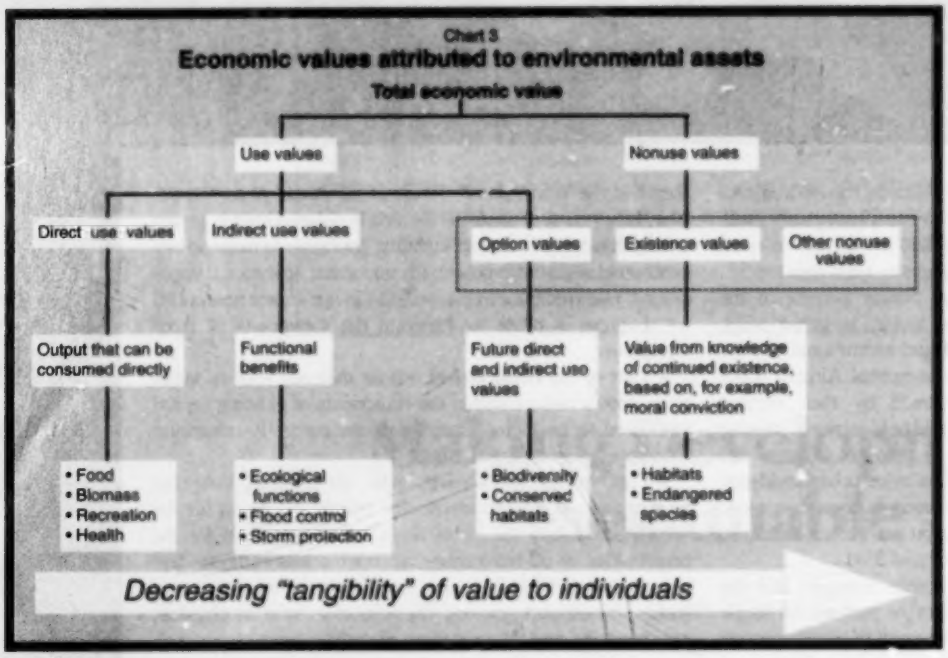
The term "sustainable development" was brought into common use by the World Commission on Environment and Development (The Brundtland Commission) in 1987. Calling for development that "meets the needs of the present generation without compromising the needs of future generations," the Brundtland Commission report highlighted the need to simultaneously address developmental and environmental imperatives.

Since then, substantial work has been undertaken in an effort to draw out the operational implications of the concept of sustainable development. This, for example, was the main theme of the World Bank's *World Development Report 1992*. The Bank's current work in this area is designed not to generate a general theory of sustainability, but rather to focus on key conceptual issues with potentially important operational implications. One thing is sure: we will fail in our efforts unless better progress is made to integrate the viewpoints of three disciplines:

- That of the ***economists***, whose methods seek to maximize human welfare within the constraints of existing capital stock and technologies. Economists are currently relearning the importance of natural capital.
- That of the ***ecologists***, who stress preserving the integrity of ecological subsystems viewed as critical for the overall stability of the global ecosystem. Some argue for the preservation of all ecosystems, although a less extreme view aims at maintaining the resilience and dynamic adaptability of natural life-support systems. The units of account are physical, not monetary, and the prevailing disciplines are biology, geology, chemistry, and the natural sciences generally.
- That of the ***sociologists***, who emphasize that the key actors are human beings, whose pattern of social organization is crucial for devising viable solutions to achieving sustainable development. Indeed, evidence is mounting that failure to pay sufficient attention to social factors in the development process is seriously jeopardizing the effectiveness of various development programs and projects.

While economists, ecologists, and sociologists would all agree that the others' concerns (illustrated in Chart 1) matter, they do not see these concerns through each other's eyes. An economist, for example, would readily acknowledge the importance of social and environmental factors but, as Chart 2 shows, would interpret these concerns through an economist's lens. Social concerns tend to be reduced to questions of inequality and poverty reduction, and environmental concerns to questions of natural resource management. Absent are important concerns such as social cohesion, cultural identity, and ecosystem integrity.






As policymakers seek to bring together experts from each of these disciplines—as equal partners—a number of conceptual and methodological questions need to be addressed. The key unresolved questions fall into four broad categories: questions of valuation; questions of decision making in the presence of thresholds and uncertainty; questions of policy and institutional design; and questions of social sustainability.

## Questions of valuation

***How should we value the environment?*** The starting point of good environmental management is to recognize the costs of environmental damage and inject them into the decisionmaking process. But this is easier said than done. As Chart 3 shows, it requires the estimation not only of the direct benefits to humans (e.g., productivity benefits of good soils and health benefits of clean water), but also of the indirect benefits (e.g., watershed protection from woodlands). Further, some natural assets, such as biological diversity, have "option" values that we are not even aware of (e.g., providing new medicines in the future) and that are particularly difficult to estimate. Finally, most of us believe that the natural world has an "intrinsic" worth, above and beyond its value to humans; here the best we can do is estimate human perceptions of that value.

A number of techniques—including contingent valuation, replacement cost estimation, and the use of "surrogate" markets—have been developed for estimating the value of nonmarketed environmental services, and the Bank has recently strengthened significantly its capacity to assist developing country policymakers in using these techniques (see "The Economist's Approach to Sustainable Development"). But much remains

# Poverty and the Environment

STEPHEN MINK
*Senior Economist*
*Middle East and North Africa Department, The World Bank*

The struggle to overcome poverty, daunting in itself, looks to be even more difficult in the face of increasingly apparent environmental constraints. A critical question for policymakers thus becomes whether the environmental aspects of poverty can be alleviated by modifying existing approaches, or if a wholly new strategy is required. A brief look at what is known about the reinforcing interplay of poverty and environmental degradation provides some clues.

## Environment's impact on the poor

***More health problems.*** The poor are the most vulnerable in terms of exposure to certain types of pollution, such as unclean water that carries infectious and parasitic diseases. They (especially women and children) also suffer disproportionately from indoor air pollution that results from burning unclean, but affordable, bio-fuels. For example, smoke in household kitchens in poor rural areas of The Gambia, India, Kenya, and Nepal routinely have suspended particulate matter concentrations exceeding World Health Organization peak guidelines by four to five times.

***Lower productivity.*** Environmental degradation depresses the poor's income by diverting more time to routine household tasks such as fuelwood collection and by decreasing the productivity of the natural resources from which the rural poor are most likely to wrest a living. A study of Nepalese hill villages with severe deforestation concluded that time devoted to fuelwood collection was diverting nearly a quarter of household labor normally devoted to agricultural activities, resulting in income loss and declining consumption and nutrition levels.

## How poverty affects environment

***Constrained time horizons.*** The very poor, struggling at the edge of subsistence levels of consumption and preoccupied with day-to-day survival, have limited scope to plan ahead and make natural resource investments (e.g., soil conservation) that give positive returns only after a number of years. Such short time horizons are not innate characteristics, but rather the outcome of policy, institutional, and social failures.

***Constrained risk strategies.*** The poor's use of natural resources is affected by their facing greater risks, with fewer means to cope. These risks range from misguided policy interventions in input and output markets to evolving land tenure systems that favor those with greater political clout. The rich array of traditional means for coping with crises—selling stored crops or goods, migration of household members, increasing wage labor, borrowing for consumption, calling on mutual assistance traditions or patron-client understandings—are often unavailable to the poor or are weakening as social norms. This means that the poor will have little choice but to overexploit any available natural resources. Moreover, the poor, especially the women, typically lack access to formal markets for credit, crop insurance, and information (e.g., extension services) that provide advice on risk-reducing agricultural practices.

## What can be done

As policymakers search for ways to promote environmentally sustainable development, it is becoming increasingly clear that certain "win-win" strategies should be harnessed to reverse the downward spiral of worsening poverty and natural

to be learned both in terms of the methodologies and their empirical application.

***How should we build sustainability into national accounts?*** Valuation techniques have usually been employed to inform decisions at the project and sectoral level, but they also need to influence decisions—and how we measure progress—at the national level. Conventional national accounts may serve macroeconomists and central bankers well, but they do a poor job of measuring sustainable income or changes in a nation's productive capacity. They include estimates of depreciation of manmade capital, but not that of natural capital—which in some countries is more important. For example, when oil is extracted and consumed, no adjustment is made for the use of petroleum energy stocks. When a tropical forest is logged, no estimate is made for the loss of an irreplaceable asset. When land cultivation increases the loss of topsoil, which subsequently accumulates in a reservoir, there is no allowance made for the harmful effects on soil and water storage.

To help address some of these deficiencies, the Bank has been collaborating with the UN Statistical Office and others to develop a new system of environmentally adjusted national accounts. There are difficult technical issues yet to be resolved, but good progress has been made in the development of a System of Integrated Environmental and Economic Accounts (see "Measuring Environmentally Sustainable Development").

***How should we value the future?*** Emitting carbon dioxide into the air costs us nothing today but may cost our great-grandchildren dearly. How should long-term impacts be valued? Economists have conventionally applied discount rates to future costs and benefits, but ecologists, ethicists, and ordinary citizens often argue that it is surely wrong to value the well-being of unborn people less than we value our own welfare. Economists reply that it is not the well-being of future generations that is being discounted; it is simply that one dollar today can be invested at a positive real rate of return to yield several dollars in the future—and thus is worth more than one dollar in the future. This is why they usually choose to discount the future at the opportunity cost (the real rate of return) of capital.

For near-term decision making, this argument is persuasive, although still subject to well-known empirical problems of how to estimate the appropriate discount rate. For the long term, however, it is right to consider whether the discount rate should be so high, since we cannot be sure that positive rates of return on investment will continue, especially if the natural resource base continues to deteriorate. Most economists would agree that discount rates over very long time periods should be lower than the 9–12 percent range usually used for medium-term investments in developing countries, but how much lower is a subject of debate, even among economists. (See the debate on "Discounting Our Descendants?" in *Finance & Development*, March 1993.)

We should reject the suggestion of some that discount rates should be set at zero; this would encourage a more capital-intensive form of development and would probably have an adverse impact on the environment. We should also reject the argument that environmental impacts should have a separate, lower discount rate than other impacts; there is no reason to give more priority to environmental protection than to health, education, or family planning projects. But we do need to explore various ways of supplementing cost-benefit analysis—such as the imposition of a "sustainability condition" requiring that the overall capital stock not be depleted.

## Thresholds and uncertainty

***How should uncertainty and thresholds be handled?*** Our knowledge about the relationship between human activity and ecological processes is still fragmentary (see "The Ecologist's Approach to Sustainable Development"). In addition, such relationships may be "discontinuous"; that is, when under stress, an ecosystem may "crash" irreversibly in a manner and at a time that could not have been predicted. This seriously complicates decision making and makes conventional approaches to risk management—assigning probabilities

resource degradation. They include:

***Promoting poverty alleviation.*** Higher incomes will enable the poor to consider longer-range options for resource use that give better returns. Policymakers should make sure that the macroeconomic policies aimed at reducing poverty through stable and broad-based income growth do not discriminate against agriculture—the principal labor-intensive sector. Policies should also promote rural infrastructure to encourage intensive or extensive farming practices where appropriate. Yet income growth and labor absorption away from environmentally fragile areas can take several generations to appreciably reduce poverty, even under the best of circumstances. There is thus a need for targeted policies to address the immediate consumption and production risks that can confront poor rural households and result in environmental degradation.

***Reducing risks and tenure insecurity.*** Temporary food-for-work programs during droughts can bring immediate benefits through minimizing natural resource "mining" by poor rural households during crises that threaten to push them below subsistence consumption levels. Measures to improve tenure rights—such as strengthening the legal framework and judicial institutions for resolving land conflicts, revising legislation that requires land clearing to establish title rights, and protecting and supporting common property management to ensure maintenance of traditional access rights by the poor—are also important. In addition, access to credit, whether to permit maintenance of minimum consumption levels or to undertake investments in natural resources, needs to be promoted.

***Addressing maldistribution.*** Improving access to services and infrastructure can reduce environmental problems confronting the poor, especially poor women. Agricultural extension and research services often fail to reach them, and they continue to pay the health, and, therefore, income consequences of inadequate access to safe potable water. Less clear is the environmental outcome of redistributing unequally owned natural resources. Land redistribution may create more jobs and reduce migration to fragile frontier resources. But in practice, redistribution often involves protracted social upheaval and uncertainty, with owners—who anticipate losing old rights or who doubt the durability of new rights—apt to overexploit natural resources, sometimes converting them into more mobile assets. A favorable environmental impact may be achieved by concentrating on situations where property rights are already uncertain or redistribution can occur quickly.

***Strengthening education and public health programs.*** Improving access to education, health, and family planning—which is at the center of most poverty alleviation strategies—takes on even more importance when environmental considerations are taken into account. Access to quality education can improve the use of natural resources and enhance options for diversifying incomes away from natural resources. Access to public health services and information can enable the poor to follow preventive measures capable of reducing environmental health risks. Finally, increasing funding of family planning to respond to unmet demand for these services can help lessen the degree to which population growth exacerbates environmental degradation.

---

*This article is based on "Poverty, Population, and the Environment," by the author, World Bank Discussion Paper No. 189 (written as a background paper for the* World Development Report 1992*), February 1993. See also, "Population, Agriculture, and the Environment in Africa," by Kevin Cleaver and Götz Schreiber,* Finance & Development, *June 1992.*

to possible outcomes and adding an insurance premium onto project costs—difficult to implement.

There are many examples of how well-intentioned human behavior has led to totally unexpected ecological damage. When chlorofluorocarbons were first used, no one anticipated the damaging loss to the ozone layer. When Nile Perch were introduced into Lake Victoria some 30 years ago to improve game fishing, few would even have guessed that it might cause the elimination of whole species and the degradation of the area surrounding the lake.

This high degree of uncertainty, however, is no reason for inaction. The dynamics of poverty, demography, and economics often make the costs of inaction even higher than those of action. But uncertainty does demand rigorous environmental assessments, drawing upon the best scientific knowledge available and including careful sensitivity analysis. A key challenge will be to narrow the range of uncertainty and make the "precautionary principle" operationally useful.

***How should we prioritize biodiversity?*** The loss of species is an extreme example of irreversibility, and the uncertainty surrounding the impact of lost biological diversity is an extreme example of our lack of knowledge. Some species are seen to be repositories of key genetic material; others are seen as of marginal genetic significance. But our knowledge in this area is quite limited.

How much priority, then, should we assign to protecting biodiversity? At one extreme, some biologists would like to save everything. The imminent extinction of the white rhino, along with threatened whales and elephants, has galvanized conservation efforts for highly visible causes. But public willingness to pay to save a myriad of lesser species (minor insects and plants) is much less evident, and the cost of saving all species may be prohibitive. Our present posture is a precautionary one—a rough-and-ready set of disorganized and disconnected initiatives, without any sure knowledge of what might be enough to preserve the world's unique genetic heritage. The challenge now is to bring greater analytical rigor in this area.

## Policy and institutional design

***How should we set priorities?*** Faced with a complex array of environmental dangers and limited resources, where should a government start? The problems that seem at first glance to be the most urgent may not in practice offer the best value for money. In Eastern Europe, for example, despite the obvious need to clean up badly polluted rivers, calculations make clear that for each dollar spent, higher benefits could be secured by reducing air pollution.

One interesting approach to priority setting is found in the work of a team at Harvard University that has developed a framework for ranking various abatement options. The core of the method, which follows on the US Environmental Protection Agency's pioneering work, consists of deriving a common set of indicators based on impacts on human health, productive assets, and ecological functions. From this matrix of hazards, sorted according to various criteria such as their pervasiveness (spatially and over time) and their total consequences (current and future), it is possible to clarify the basis for establishing priorities for addressing different environmental hazards. This methodology is still in its infancy; the next step is to apply it in a number of countries on a pilot basis.

**Ismail Serageldin**
*Egyptian, is Vice President, Environmentally Sustainable Development. Long associated with poverty and social concerns at the Bank, he holds degrees from Cairo University and Harvard (PhD).*

Such analyses may be useful to countries as they draw up national environmental action plans that would enable decisionmakers to view their country's environmental problems as a whole. Moreover, to the extent that the process is broadly participatory, the public can be made aware of the options and dangers facing the nation.

***What policies work best?*** Policies for environmentally sustainable development fall into two categories. First, there are those that clearly promote economic growth and improved environmental stewardship. These so-called "win-win" policies include removing general subsidies on resource use, clarifying property rights, and accelerating education and population programs. Such policies should be relatively uncontroversial, needing political will and funding for their implementation. Second, there are policies that seek to stop environmentally damaging behavior through regulations and incentives. These are more controversial in that, implemented poorly, they can distort the economy and fail to improve the environment. Textbooks and empirical studies tell us that market-based instruments—those that charge polluters for the damage they do—are generally better than quantitative restrictions, yet the latter have generally dominated policymaking. A major task is to assess the extent to which developing countries can avoid the expensive "command and control" approaches common to industrial countries and thus minimize any trade-offs between income growth and environmental protection.

***How should we build capacity for the task?*** Many well-meaning environmental policies have failed due to the lack of institutional capacity to get the job done. As a result, countries around the world are now actively seeking to strengthen their institutional capacity; the Bank is currently assisting over 50 of them. Experience suggests that the organizational structure of institutions is less important than clarity of mandate, adequate resources and technical skills, authority to operate across disciplinary and jurisdictional lines, and accountability for results. Much remains to be learned in this important area, however, both in terms of appropriate institutional design in various sociocultural contexts and in how to enhance the human resource base for effective management.

## People-centered development

People are the instruments and beneficiaries, as well as the victims, of all development activities. Their active involvement in the development process is the key to success (see "The Sociologist's Approach to Sustainable Development"). Furthermore, unless we keep foremost in our minds the need to continue to improve the welfare of the people, environmental programs will certainly fail. The poor, in particular, tend to be the hardest hit by environmental degradation and the least well-equipped to protect themselves, yet, at the same time, they cause much of the damage out of short-term necessity, ignorance, and lack of resources (see box).

The challenge is to make *participation* more than an empty catchword. Practical progress is required at three levels. First, those potentially affected by development projects need to be more involved at the design stage. Second, local knowledge needs to be better utilized in the design and implementation of programs. Third, we need to build our capacity to assess social impacts of policies and investments—a particularly important, but difficult, task, requiring a different skill mix and a different way of doing business. Indeed, doing business differently will be required in many areas if development is to be truly sustainable. ■

# The Sociologist's Approach to Sustainable Development

MICHAEL M. CERNEA

***THE SOCIAL components of sustainability are no less important than the economic and technical ones. "Putting people first" in projects improves social organization and increases social capital.***

The case for environmentally sustainable development is usually argued in economic and technical-ecological terms. As has happened in other areas, many are tempted to think that if they can "get the economics right," everything else will fall into place. Soothing as this econo-mythical invocation may be, it is nonetheless one-sided. The social components of sustainability are no less important. Indeed, failure to recognize the determinant role of the "social actors" has doomed many programs trying to induce development.

The environment is at risk not from some extraterrestrial enemies, but from human beings, including both local and distant resource users. Thus, the call for "putting people first" in policies and investment programs for inducing development, or for assistance in spontaneous development, is not a radical call: it is a realistic one. It simply means recognizing the centrality of the social actors and their institutions in sustainable development. Sustainability must be "socially constructed"—that is, arrangements of a social and economic nature must be made purposively. This is why building sustain ability must be approached as a threefold task—social, economic, and ecological—simultaneously.

## A sociologist's "tools"

What does the sociological perspective add to the arsenal of tools for achieving sustainable development? Two sets of elements, at least. First, it provides a set of concepts that help explain social action, the relationships among people, their complex forms of social organization, their institutionalized arrangements, and the culture, motives, stimuli, and values that regulate their behavior vis-à-vis each other and natural resources. Second, it offers a set of social techniques apt to prompt coordinated social action, inhibit detrimental behavior, foster association, craft alternative social arrangements, and help develop social capital.

***Social organization.*** Incorporating new elements of social and institutional organization into development means much more than reciting empty slogans about "beneficiary participation." It demands competent social analysis and creative social engineering

work—most important, figuring out which building blocks make up a social arrangement conducive to enduring development. The building blocks of social organization typically include the social actors themselves; the social contract governing relationships (including conflicts) among local users and remote stakeholders; the prevailing cultural systems of resource entitlements—ownership, usufruct, or custodianship; authority systems and enforcement mechanisms; an infinite range of producers' organizations, from family based systems or water users' associations to large corporate enterprises; labor-exchange networks; and value and belief systems.

If identified and known, these building blocks can be translated and articulated into powerful levers for action-oriented programs; but if they are ignored, they can wreck expensive programs and curtail sustainability (see box). This was confirmed once again by a study that examined whether 25 Bank-financed projects in Africa, Asia, and Latin America demonstrated sustainability several years after their completion. Disappointingly, the study found that over half of them (13 projects) had left no lasting developmental impact 6–10 years after completion and had failed to produce the expected flow of benefits. Among the basic causes of nonsustainability were the neglect of sociological factors in project design and the lack of supportive institutions and grassroots participation. In sum, the "social scaffolding" of sustainability was missing. Conversely, all the projects that proved to be sustainable undertook from the outset purposive institution building. The study demonstrates why sociological knowledge, as well as economic and ecological expertise, is needed to promote sustainability in investment programs.

***Social techniques.*** Program designers searching for increased sustainability often are not aware of the vast repertories of social management "tools" and cultural levers that can be marshalled to mobilize social energy and coordinated action under induced development programs. These tools range from creating public awareness to investing in human capital; from simple consultations to fostering participatory comanagement; from incentive systems to institutional controls; from relying on traditions to changing old practices and introducing innovations; from empowerment to increasing social cohesion; and from economically motivating individuals' behavior to harnessing the power of solidarity, trust, self-organization, and group-embraced values.

These tools can also be combined to change existing social patterns and promote a culture of resource protection and enhancement. In social forestry projects, for instance, planners have several strategic options for tree planting programs: community-centered approaches, household-centered approaches, or small group-centered approaches. The *social*—not only the technical—strategy must be chosen from the outset, and the goal should always be to build or strengthen the institutional arrangements. When this prescription is not followed, as has happened in many village woodlot schemes designed to provide wood for fuel and to stem deforestation, projects and investments perish without trace. In India, for example, because these "community woodlots" were conceived without a sufficient understanding of how stratified the villages were, few people showed up to plant trees on a "common" plot, but many came to collect wood; in the end, the "village" woodlots became government woodlots, wasting money and goodwill.

## Dancing societies or labor exchanges?

The cultural map of Tanzania's Sukumaland region is dotted with *Malika ga Mbina*, the "secret dancing societies." To the socially untrained eye, they remain either invisible or seem to be irrelevant for development endeavors. But to the socially perceptive eye, the *Malika ga Mbina* appear for what they really are: stable, territorially ramified, robust, and responsive networks of labor exchange and mutual help—not just groups that perform dances at rituals and feasts.

These groups embody an adaptive strategy to labor scarcity—they help meet the seasonal peak labor demands of individual farms at low costs. A sophisticated yet inconspicuous form of social organization, they have leadership, rules and role structures, and welfare-relevant functions. They reach beyond primary kinship ties, link microsocial units across dispersed settlements, and efficiently relay mobilization signals to and from the membership through a flexible network of foot messengers.

By mediating labor demands collaboratively, this pattern of social organization shoulders the survival and sustainability of local farming systems under severe environmental constraints. Not harnessing their power would undermine the effectiveness of any resource development program.

## What role should users play?

One of the crucial—and still controversial—questions is what role direct resource users should have in environmental management. Some policymakers reject the option of entrusting management responsibilities to the users, fearing that the resources will be abused; instead, they advocate state controls. Others plead against government intervention, focusing only on users or markets.

Evidence from many countries suggests that the statist solution, applied exclusively, promises more failure than success. But this does not imply that resource management should be fully entrusted to the users. Policymakers should determine whether the users are always able to exercise management. Taking such ability for granted in all cases is simply naive.

The issue, however, is not just the subjective capacity (or lack thereof) of one or another individual user, or of many users, to exercise management. Rather, the decisive factor is the presence or absence of forms of social organization structurally suited to manage the environment. Otherwise, the individual actions of multiple users may easily combine to produce an adverse system-level outcome. Often, atomistic sets of individual users need to be organized into interactive, institutionalized, and culturally cohesive groups, in order to acquire the ability to manage, trigger action, and enforce adequate rules, rights, and obligations.

Can traditional patterns of social organization in developing countries perform this role? Disappointment with proliferating, weak, and ineffective government agencies has led some development thinkers to advocate reviving traditional institutions. Under certain circumstances, this social technique can be sometimes effective. But this cannot become a universal, mainstream strategy, as forming institutional structures for environmental management at the local level requires more than simply reviving old institutions or traditions.

## Building social capital

The practical alternative is to increase, diversify, multiply, and solidify the various forms of formal organization of rural communities. All over the developing world, the degree of formal organization in rural areas lags far behind that of urban populations, making rural areas especially vulnerable to strong exogenous forces and less able to mobilize their own social potential.

To counteract this vulnerability, development strategies can make a vast contribution by investing not only in the economic and technical prerequisites of sustainability but also in the formation of the socio-organizational structures for enduring development. Along these lines, two twin social concepts must inform development policies and actual programs: *organizational intensity* and *organizational density*.

The organizational intensity of a development program defines the level of emphasis, high or low, with which a program invests in social "software," building organizational structures and institutional capacity. If used as a compass from the outset, this concept helps calibrate the investments toward explicit institutional goals and avoid technocentric models that overlook the social context. Programs that emphasize the construction of an enduring institutional scaffolding for development can be called organizationally intense, while those neglecting it have a low organizational density and a smaller chance for long-term impact. Whenever such an intensive strategy succeeds, the society involved achieves a higher organizational density—an enhanced capability to sustain and propel development.

The concept of organizational density defines, in turn, the frequency and strength of various forms of social organizations that make up a given cultural fabric and the frequency with which individuals participate in multiple networks of socially organized activities. This density varies greatly, of course, by cultural setting and historic time. In the Republic of Korea and Thailand, for example, the organizational density of rural society is considerably higher than in India or Senegal.

An interesting parallel can be drawn between technology and organization. Donor agencies and governments alike have long pursued the transfer of advanced technology through technology-intensive—but not organization-intensive—aid strategies. However, technology, which is the physical capacity, cannot realize its full development potential unless it is embedded within adequate patterns of social organization—the social capital that sustains, uses, and maintains the technology. Thus, creating and strengthening adequate organizational structures, and involving the users of the technology, is no less important than the technology itself.

Indeed, if a high degree of social organization is itself a strategic resource for development, and if organization enhances the potential of individual actors by mobilizing them and maximizing synergy, then building up the levels of organization in society is an effective way to enhance the endurance and impact of development gains. This is why, when choices among investment program options are being made, it is legitimate to ask: "What is their degree of organizational intensity? How can this degree be enhanced to increase social sustainability?"

Creating organizations is equal to creating new social capital. Appropriate organizations are needed to enhance individuals' social capacity for coordinated action and empower them as agents of development activities. Organizations accomplish this by defining mutual obligations and member rights, by creating sets of specialized roles internal to the organization, by establishing internal authority and accountability systems, by promoting norms and behavioral patterns regarded as useful to the group, and inhibiting those regarded as detrimental. Organizations incorporate important accumulations of human experience and knowledge, which is social capital. And new and growing social capital is indispensable for the social sustainability of development.

Irrigation projects—an area in which the World Bank has long been involved—are a good test case for whether or not development strategies are organization-intensive and purposively construct social sustainability. Many governments have supported irrigation by financing and building the physical infrastructure of large irrigation systems. Without such an infrastructure, irrigation is impossible. But if the institutional structures are not created as well, sustainable irrigation cannot occur.

In practice, irrigation programs have often dealt with institution building by proliferating governmental bureaucracies to manage the irrigation systems. Infinitely less attention has been paid to the creation of stable, culturally appropriate, and institutionally enduring patterns of social organization at the grassroots level. Indeed, while top-heavy irrigation administrations have multiplied and flourished, the creation of networks of water users' associations, or support for existing ones, has been underrated, and, in some cases, ignored. Since neglecting or bypassing existing grassroots organizations amounts to disinvestment in institutions and in the social capital for development, many of these projects have been undermined, and physical irrigation structures have deteriorated (or even collapsed) much earlier than they would have otherwise.

Learning from such experiences, Bank-financed irrigation projects in the 1980s have embraced a more organization-intensive strategy, promoting the creation of water users' associations. The most striking example is probably the innovative irrigation program in Pakistan, which embodies an organization-intensive strategy that has led to higher organizational density and better resource management (see box). Similar successful approaches have been applied by governments and the Bank in communal irrigation schemes in the Philippines, Thailand, and Sri Lanka. Eastern Senegal has benefitted from a uniquely successful program aimed at creating pastoral/grazing associations that have effectively improved grasslands and water management.

In sum, promoting group formation and creating organizations are not easy social endeavors, but they are key avenues for "putting people first" and for designing strategies around social actors. The returns from enhanced degrees of adequate social organization are enhanced welfare, lasting social sustainability for development programs, and better environmental management. ■

## An innovative approach to water use: Pakistan

**In the late 1970s, Pakistan started a vast program for improving on-farm water management, assisted through a series of three successive Bank-financed projects (stage three is still ongoing). The program's environmental and economic goals were typical for irrigation projects: improving the husbandry of the farmer's vital resources of water and land, reducing seepage and losses, controlling bank erosion, and increasing irrigation effectiveness. But the Pakistani projects broke new ground by recognizing the key role of the local actors: the water users themselves. Legislation was enacted to empower farmers to form water users' associations along each watercourse and help in canal lining, thereby creating grassroots social structures for sustainable water management.**

**Although covering all of Pakistan's 100,000 watercourses requires much more work, the creation of some 14,000 users associations, despite their ups and downs, is already an extraordinary accomplishment. By investing in building organizational capacity, the water management program complements the physical canal network with a new social infrastructure, helping to improve environmental management by increasing the "organizational density" of Pakistan's rural society.**

**Michael M. Cernea**
*a US resident, is the World Bank's Senior Adviser for Social Policy and Sociology working in the Environment Department. He is the editor of* Putting People First—Sociological Variables in Development (1991).

# The Ecologist's Approach to Sustainable Development

COLIN REES

*Acting Division Chief, Land, Water, and Natural Habitats, Environment Department, The World Bank*

***AS ECOLOGISTS take on a larger role in economic decision making, they bring a systemwide perspective, a long-term view that underscores prevention, and a package of ecological practices that reinforce sound socioeconomic development.***

Traditionally, ecology—the structure and function of the natural environment—was of little relevance to those interested in human affairs. But in recent years the situation has changed, reflecting a more sophisticated perception of the way humans influence the use and conservation of natural resources. Where natural resources were once considered a "free good" and unlimited growth prevailed, today's attitudes embrace three fundamental ecological principles:

- Human economic activity is a subsystem that operates within a larger, but finite, ecosystem. Disordering of the ecosystem (e.g., depletion and pollution) eventually interferes with the life-support systems sustaining the economy.
- As expanding economic activity and growing human populations use increasing amounts of natural resources and produce ever-increasing volumes of waste, the limits (or carrying capacities) of ecosystems are being exceeded.
- Some development impacts will, if drastic enough, cause long-term, and even irreversible, environmental changes. For example, when tropical forests are felled and soil exposed, the minerals (already in short supply) are leached by the rain and the soil hardens, preventing forests from regenerating and crops from being reestablished.

As a result of the new awareness, ecologists now play a vital role in defining human use and management of forests, wetlands, and coastal areas and in balancing the interactions among humans, livestock, and the plants and soil supporting them. Ecologists also have a growing involvement in the design and implementation of development projects, as governments move to protect air and water quality, conserve natural resources, and support economic development with sound environmental management.

The challenge for ecologists is how best to measure and predict what happens to the relevant natural system, or "ecosystem," when development takes place. They might be asked to advise on where to locate an industrial plant and how the resulting pollutants should be treated—essentially measuring the absorptive capacity of a receiving lake or river. They might also be asked to predict harvests and stocks of natural resources, based on which factor is in least supply and its availability (e.g., nutrients in tropical agricultural soils). When the structure and processes of an ecosystem are understood, equations can relate essential traints in a predictive model.

As ecologists become increasingly drawn into the development process—initially, the concerns were local pollution and health, whereas, now, the concerns are regional and even global—they are helping to shape the new, more environmentally aware development agenda. For them, the strategy is threefold: (1) encouraging the integration of ecological considerations into economic and sectoral development policies; (2) devising anticipatory and preventive strategies for development projects; and (3) demonstrating that sound ecological policies also benefit development.

## A systemwide approach

Ecologists bring a systemwide perspective, focusing on the dynamic nature of complex environmental problems, with their multitude of links and indirect effects. Many of these

effects are manifest either at distant locations (downstream effects) or in the future (the gradual depletion of soil nutrients). In forest management, for example, harvesting usually induces significant changes in the forest ecosystem (as measured by such indicators as topsoil depth and infiltration capacity), which in turn affect productivity. But changes also occur off site, with soil loss leading to a potential decrease in fish production and reduced reservoir storage capacity.

For the past 10–15 years, ecologists have relied on national conservation strategies, environmental profiles, environmental sector reviews, and ecological or natural resources profiles to help move sustainable use higher on the political agenda and strengthen the relevant agencies in many countries around the world. These tools have also proved useful in determining the optimal use of natural resources on a sustainable basis, the nature and dynamics of social and technological change, trade-offs between total exploitation of natural resources and their conservation, and benchmark indicators in the integration of conservation with development.

In the last two to three years, the World Bank, along with other aid agencies, has adopted another of the ecologists' tools—environmental action plans. By fall 1993, some 22 developing countries had completed such plans, and others were in the process of preparing them. These plans describe a country's main environmental problems and identify policies, institutional measures, and investments that address them. Although these plans are still in a formative stage, they are beginning to play a role in preventing serious and irreversible environmental degradation.

## Prevention better than cure

As policymakers have come to realize that curing degraded ecological systems is extremely expensive, time-consuming, and often impossible, environmental policies aimed at anticipating significant ecological and socioeconomic impacts—rather than simply reacting to them—have taken on new importance. For example, tropical forests, grasslands, coral reefs, mangroves, and many other unique habitats are being rapidly destroyed; species extinction is accelerating; and in 8 of the world's 17 ocean fishing areas, the amount of fish caught between 1987 and 1989 exceeded the lower range of the estimated sustainable catch.

But the application of anticipatory and preventive environmental raises further difficulties. Such policies may require action in advance of both scientific certainties and political acceptance of demonstrated adverse impacts. Moreover, the knowledge needed to predict environmental damage is often weak or absent. To address these difficulties, ecologists increasingly rely on environmental assessments aimed at determining the potentially significant environmental impacts of a proposed development project. In fact, since October 1989, the World Bank has required that all proposed investment projects be screened in this manner, leading to the redesign of numerous projects. In the Lower Guayas Flood Control Project in Ecuador, for example, a flood control channel was rerouted to spare a reserve that contained the threatened Horned Screamer bird and the last of western Ecuador's tropical dry forest.

Although environmental assessments may continue to be the predominant environmental planning technique for the foreseeable future, a key drawback is that they operate on a piecemeal, sectoral basis, often precluding a comprehensive and integrated view (e.g., multiple use of natural resources and the capacity to consider common waste collection, treatment, and disposal systems). Likewise, the degree to which a particular project's exploitation of resources (energy and raw materials) is at variance with overall regional needs may go unappraised. An important step toward full integration of ecological factors into mainstream economic decision making must now be to expand the application of environmental assessments so that they can provide guidance to policy-based lending—which, after project lending, is the second-largest use of Bank resources.

### Valuing ecosystems: the Bintuni Bay mangroves

The precise economic value of ecological assets is difficult to assess. This is partly owing to the lack of information on the "market value" of ecological "goods and services," and partly owing to uncertainty about the dynamics of ecosystems, as well as problems of quantifying certain "nonmarket" values.

Nonetheless, in 1991, policymakers in Indonesia tried to quantify ecosystem benefits before deciding what to do with one of the largest remaining mangrove forests—304,000 hectares surrounding Bintuni Bay in Irian Jaya. One proposal urged conserving most of the area, another expanding exploitation for the production of woodchips for export. At risk were the economic benefits of near-shore shrimp and fish, as well as the livelihood of local inhabitants and protection from farm-land erosion.

A Canadian-funded cost-benefit analysis compared the proposals, taking into account links with the other economic benefits of the different ecosystem functions (fisheries, timber, minor products and local uses, erosion control, and existence values). The study concluded that a selective cutting approach covering 25 percent of the total mangrove area would maximize the asset value of the resource. However, an important caveat was the extent of uncertainty about actual links among ecosystem functions, meaning the penalty for "guessing wrong" could be quite high. A more conservative approach might have been in order, including adopting additional measures (such as selective cutting and replanting) to mitigate the adverse effect that timber cutting might have on the different ecosystem functions.

## Good ecology/good economics

Ultimately, ecologists will be effective in influencing policy only if they can demonstrate that sound ecological policies will promote, not hinder, sustainable economic development. This requires a partnership with economists—a partnership that is being developed, both in estimating the economic cost of damaged ecosystems and the economic benefits of conserving such systems (see box).

Even so, the structure of government decision making often works against the best policies being adopted. Natural resource agencies—which typically are charged with both regulating and promoting natural resource use—have found it difficult to move from exploitation to sustainable use, in part because of the intense competition for increasingly scarce budgetary resources and the consequent pressure to produce results that can be reflected quickly in improved economic performance. In addition, well-defined and generally accepted measures of environmental and natural resource management performance are in short supply. This may explain why a central agency with broad powers to protect the environment is often unable to persuade, for example, a forestry department to develop forests on a sustainable basis, or an agriculture department to regulate the use of fertilizers and pesticides.

The answer to these problems lies in restructuring these institutions. Consensus suggests that a new facility at the highest levels of policy formulation is needed so that environmental policies cutting across the jurisdictional lines of existing agencies can be identified and analyzed. In all this, economic analysis has a major role to play. Through natural resource assessments, economic tools can help determine the desirability of environment-related projects, their design and location, the need for introducing new incentives or removing misguided ones, and the policy instruments necessary for sustainable development. ■

# The Economist's Approach to Sustainable Development

MOHAN MUNASINGHE

***ENVIRONMENTAL economics helps move us closer to sustainable development by better incorporating environmental and social concerns into conventional decision making. It involves a novel synthesis of existing economic principles and their extensions.***

Historically, the development of the industrialized world focused on economic output, so, not surprisingly, the postwar model adopted by developing countries was growth dominated. But in the 1960s, the equitable growth model was developed to incorporate social issues such as poverty alleviation and income redistribution. In the 1980s, the model was broadened again to embrace the concept of sustainable development—reflecting increasing concerns about the environment.

Economic growth still overshadows the other objectives, following the example of the industrialized countries that began to tackle their environmental problems only after achieving major economic objectives. But policymakers worldwide are increasingly trying to find sustainable options. The goal is to maximize the net welfare of economic activities, while maintaining or increasing the stock of economic, ecological, and sociocultural assets over time (to ensure the sustainability of income and intragenerational equity) and providing a safety net to meet basic needs and protect the poor (thereby advancing intragenerational equity). Environmental economics contributes to this search by helping to incorporate environmental and social concerns into economic decision making. It offers policymakers both a better way of tracing environmental and social impacts, and improved decisionmaking tools.

Environmental economics as a field is not really new. Over the past two decades, existing economic principles have been built on and extended, particularly in valuing environmental and social impacts that often are not well reflected in market transactions. But it is only recently that we have begun to apply these concepts to developing countries and, in the process, influence decision making mainly at the project level. In the past few years, environmental economists have also begun to take an interest in macroeconomic policies.

While the underlying basis of this approach is economic optimization and efficient resource allocation, practitioners recognize that these concepts may not be easy to apply to some environmental and social objectives—such as preserving the dynamic resilience of ecological systems to withstand shocks, promoting public participation, or reducing conflicts. In these cases, they often rely on other techniques, such as multicriteria analysis, to facilitate trade-offs among different goals.

## Tracing impacts

The first way environmental economics improves policy analysis is by helping to trace the impacts of decisions at various levels.

***Project level.*** Traditionally, economists have relied on cost-benefit analysis to help determine whether a project is worth undertaking. Following the Bank's 1989 guidelines on environmental assessments and recent advances in valuing impacts, this type of analysis is being increasingly adapted to better account for environmental and social concerns, despite special problems.

First, some inputs and outputs are not correctly priced by the market. One example is externalities—the beneficial (or harmful) effects that are imposed on others but cannot be reimbursed by (or charged to) the originator. Unfortunately, externalities are often difficult to measure in physical and monetary terms. Another example is open-access resources—typically assets usable by all without payment, such as a lake or public highway—which are difficult to value and tend to be overexploited since user charges are negligible.

What can be done? The value of an externality can be assessed, based on its shadow price or economic opportunity cost, and a charge imposed. But if this is not possible, policymakers can impose regulations and standards that set physical limits on perceived external damages, or better define property rights—thereby encouraging improved natural resource management.

Second, with well over one billion poor worldwide living on less than $1 per day, national policymakers often seek to reduce the income gap between rich and poor groups. This may justify giving greater weight to benefits and costs that accrue to the poor relative to the rich. In practice, such formal weighting schemes have seldom been used in project evaluation. More direct methods, like poverty assessments and targeting disadvantaged groups, have proved more useful.

***Sectoral level.*** Studies show that sectorwide actions—like water and energy pricing policies, investment programs involving a series of projects, or administrative measures such as improving land tenure—often have stronger environmental and social impacts than individual projects.

The basic rule for efficient pricing of a scarce resource (or service) such as water (or transport) is that price should equal the cost of providing a marginal (additional) unit of output. But in many countries, such resources are subsidized. Raising prices closer to efficient levels is essential to reducing their wasteful use, thereby realizing both economic savings and environmental gains.

Environmental-economic analysis has helped in this regard. First, it reinforces the need for both efficient pricing and additional charges to cover external impacts. For example, if automobile exhaust causes respiratory problems, marginal cost-based fuel prices should be supplemented by pollution taxes corresponding to the additional environmental or health damage. Second, this type of analysis encourages long-run, comprehensive resource planning.

***Macroeconomic level.*** Economywide policies (both sectoral and macroeconomic) have an effect on the natural resource base, but the complicated interactions are not well understood. No simple generalizations are possible, but many instances of environmental damage stem from market failures and policy distortions, exacerbated by poverty. Broad policy reforms that promote efficiency or reduce poverty should also help the environment, but some reforms may have negative environmental effects, depending on pre-existing (and often localized) constraints (i.e., inadequately defined property or resource rights).

The solution is not necessarily to modify the original broader policies (which have conventional socioeconomic goals), but rather to design complementary measures that will help mitigate the negative effects or enhance the positive impacts of the original policies on the environment (see "Are Economywide Policies Good for the Environment?" by Mohan Munasinghe, Wilfrido Cruz, and Jeremy Warford," *Finance & Development*, September 1993).

Many aspects of macroeconomic policy are based on the standard system of national accounts (SNA). To incorporate hitherto neglected environmental impacts into GNP and other related measures of income and output, the SNA should be environmentally adjusted. A start has been made through satellite accounts containing environmental data that will supplement traditional SNA data (see "Measuring Environmentally Sustainable Development" in this issue).

***International level.*** Regional impacts (e.g., acid rain) and global issues (e.g., ozone

| Mode of behavior | Market type: Conventional market | Implicit market | Constructed market |
|---|---|---|---|
| Based on actual behavior | Effect on production<br>Effect on health<br>Defensive or preventive cost | Travel cost<br>Wage differences<br>Property values<br>Proxy goods | Artificial market |
| Based on intended behavior | Replacement cost<br>Shadow project | | Contingent valuation |

**The most useful valuation methods look at how environmental changes affect directly observable behavior valued in conventional markets.**

***Effect on production.*** Impacts valued by the effect on the quantity, quality, or production costs of marketed outputs.

***Effect on health.*** Impacts valued as output lost due to sickness or death, including foregone earnings and costs of health care or prevention.

***Defensive or preventive costs.*** Ex-post costs of mitigating damage caused by environmental impacts provide a minimum estimate of original damage costs (e.g., the extra costs of purifying polluted water).

**A second set of methods seeks to value intended actions in markets.**

***Replacement cost.*** Future cost of replacing an impaired environmental resource by an equivalent asset, assuming that the original resource was at least as valuable as the replacement expense.

***Shadow project.*** Closely related to replacement cost—involving cost of special project designed to offset environmental damage caused by another project (e.g., cost of new reafforestation scheme to replace forest area inundated by hydro-dam).

**If direct market valuation is impossible, indirect market data may be used to determine implicit values.**

***Travel cost.*** Willingness of tourists to pay a surplus over the normal price to visit a recreational site. Demand (e.g., frequency of visits per year) is first related to variables like visitor income and price—including entry fees, travel costs, and opportunity value of time.

***Wage differences.*** Wage premium needed to compensate for working in polluted or hazardous environment, after first accounting for other wage determinants like age and skill level.

***Property value.*** Willingness of property buyers to pay extra for real estate in cleaner neighborhoods.

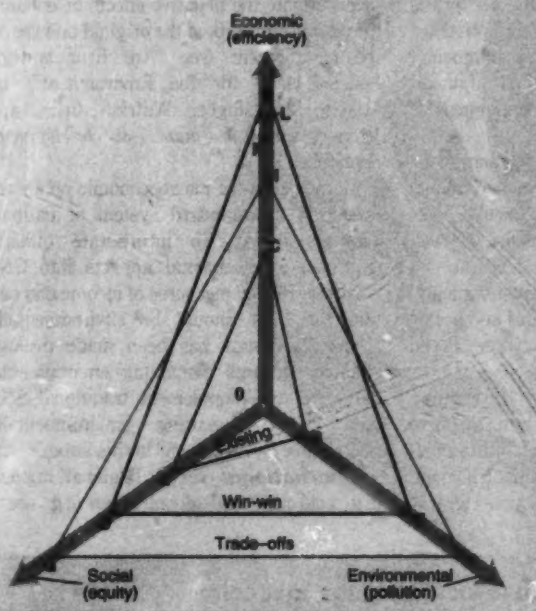
***Proxy goods.*** Market value of a substitute for an environmental asset that itself is not marketed.

**Where market data cannot be used, a final group of methods simulate market-like behavior, using marketing experiments or surveys.**

***Artificial market.*** Willingness to pay for an environmental asset determined on an experimental market (e.g., home water purification kit marketed at various price levels to assess demand).

***Contingent valuation.*** Willingness to pay for an environmental asset or willingness to accept compensation for its loss, determined by direct questions. The method is most effective if respondents are familiar with the asset (e.g., drinking water quality).

## Multicriteria analysis: when valuation falls short




Multicriteria analysis offers policymakers an alternative when progress toward multiple objectives cannot be measured in terms of a single criterion (i.e., monetary values). Take the case of drinking water—an essential element of sustainable development—illustrated in this chart. While the economic value of water is measurable, its contribution to social and environmental goals is not easily valued monetarily. Outward movements along the axes trace improvements in three indicators: economic efficiency (net monetary benefits), social equity (service to the poor), and environmental pollution (water quality).

How are policy options assessed? First, triangle ABC describes the *existing* water supply where economic efficiency is moderate, social equity is low, and overall water quality is worst. Next, triangle DEF indicates a "win-win" future option in which all three indices improve, as could occur with a new water supply scheme that provided cleaner water, especially to the poor. The economic gains would include cheaper water and increased productivity from reductions in waterborne diseases; social gains would accrue from helping the disadvantaged; and wastewater treatment would reduce impure water discharges and overall water pollution.

After realizing such "win-win" gains, other available options would require trade-offs. In triangle GIF, further environmental and social gains are attainable only at the expense of sharply increasing costs. In sharp contrast to the move from ABC to DEF, which is unambiguously desirable, a policymaker may not make a further shift from DEF to GIF without knowing the relative weights that society places on the three indices. Such preferences are often difficult to determine explicitly, but it is possible to narrow the options. Suppose a small economic cost, FL, yields the full social gain DG, while a large economic cost, LI, is required to realize the environmental benefit EH. Here, the social gain may better justify the economic sacrifice. Further, if budgetary constraints limit costs to less than FK, then sufficient funds exist only to pay for the social benefits, and the environmental improvements will have to be deferred.

A recent Bank study of power system planning in Sri Lanka demonstrated the versatility of this technique. For example, end-use energy efficiency measures provided "win-win" options (i.e., they were superior to all other alternatives on the basis of air quality, biodiversity loss, and economic costs). Conversely, several prominent hydropower projects could be excluded because they performed poorly in terms of both biodiversity loss and economic costs.

layer depletion, global warming, biodiversity loss, and pollution of international waters) have raised concerns. These pervasive and long-term problems have led to new ideas on uncertainty, irreversibility, and time discounting. For example, even when impacts are uncertain, sustainability suggests that limits should be imposed on resource degradation, particularly if future consequences could be irreversible and catastrophic. This precautionary approach underlies the emerging consensus on limiting greenhouse gas emissions to avoid possible global warming. Efforts are also under way to improve mitigation mechanisms to mobilize and allocate resources efficiently and equitably (e.g., the Global Environment Facility).

## Better decisionmaking tools

Environmental economics also offers policymakers a variety of tools to value impacts and improve development decisions.

***Valuation techniques.*** The basic aim of environmental valuation is to determine the total economic value of a resource (see Chart 3 on pg. 8). Total economic value has two parts: *use value* and *nonuse value. Use values* can be broken down into three types: (1) *direct use values,* determined by the known contributions an environmental asset makes to production or consumption (e.g., food, recreation); (2) *indirect use values,* including the benefits derived from functional services that the environment provides to support current production and consumption (e.g., ecological functions); and (3) *option values,* or the willingness to pay now for future benefits expected from an existing asset (biodiversity). *Nonuse values* occur even though the valuer may have no intention of using a resource; one category—*existence values*—arises from the satisfaction of merely knowing that the asset exists (e.g., rare species).

The next hurdle is to estimate these values. The basic concept underlying valuation techniques is an individual's willingness to pay for an environmental service or resource. (In economic terms, the area under the Hicksian demand curve that indicates how demand varies with price while keeping the user's welfare level constant.) A related measure is what people are willing to accept as compensation for environmental damage. Valuation methods may be categorized, as shown in Table 1.

***Multicriteria analysis.*** Sometimes a single criterion—putting costs and benefits in monetary terms—cannot be used. This might be the case for biodiversity loss. Another approach, called multicriteria analysis, draws on nonmonetary measurements. It clarifies the most important attributes or goals, eliminates many irrelevant options, and makes the final trade-off process more transparent, while also providing the decisionmaker with more flexibility of choice (see chart).

***Application.*** Currently, almost 200 World Bank projects are subjected to environmental analyses each year, of which about 60 undergo comprehensive environmental assessments. The practical use of a wide range of techniques is being tested in several Bank studies involving forestry, agriculture, energy, and water projects. One example is the study on Madagascar, which investigated forest management policies involving the proposed creation of the Mantadia National Park. The study demonstrated how a variety of valuation tools, including effects on production

| Activity/policy | Main objective | Matrix of other impacts on key sustainable development issues | | | |
|---|---|---|---|---|---|
| | | Land degradation | Air pollution | Resettlement | Others |
| **1. Macroeconomic and sectoral policies** | Macroeconomic and sectoral improvements | Positive impacts due to removal of distortions<br>Negative impacts due to remaining constraints | | | |
| Exchange rate | Improve trade balance and economic growth | (- H)[2] | | | |
| Energy pricing | Improve economic and energy use efficiency | | (+M)[4] | | |
| Others | | | | | |
| **2. Complementary social and environmental policies** | Specific or local social and environmental improvements | Enhance positive impacts and mitigate negative impacts (above) of broader macroeconomic and sectoral policies | | | |
| Market based | Reverse negative impacts of market failures and policy distortions | | (+M)[5] | | |
| Nonmarket based | | (+H)[3] | (+M)[6] | | |
| **3. Investment projects** | Improve efficiency of investments | Investment decisions made more consistently with broader policy and institutional framework | | | |
| Project 1 (hydro dam) | Use of project evaluation (cost-benefit analysis, environmental assessments, multi-criteria analysis, etc.) | (- H)[7] | (+M)[7] | (- M)[7] | |
| • | | | | | |
| • | | | | | |
| • | | | | | |
| Project N | | | | | |

[1] A few examples of typical policies and projects as well as key environmental and social issues are shown. To illustrate, some qualitative impact assessments are also indicated—thus + and - signify beneficial and harmful impacts, while H and M indicate high and moderate.
[2] Devaluation increases profits from timber exports and leads to deforestation of open access lands.
[3] Controlling access or assigning property rights to forest lands reduces deforestation.
[4] Raising energy prices to reflect marginal costs reduces wasteful energy use and air pollution.
[5] Charging air pollution taxes reinforces effects of marginal cost pricing.
[6] Increasing financial accountability of state-owned enterprises forces them to react positively to energy price and pollution tax increases.
[7] Hydroelectric dam inundates forested land and displaces local villagers, but reduces air pollution by replacing thermal power generation.

(opportunity cost), travel costs, and contingent valuation could be applied under difficult developing country conditions. The study found that:

- Using the land that would be set aside for the new park, the average local household produces 487 kilograms of rice worth about $128 per year from 1 to 2 hectares of land. Fuelwood, the only other economically important forest product collected, is worth about $38 per household per year. The net cost imposed on villagers by creating the park ranges from $90–110 per household per year, based on both the opportunity cost of foregone production and contingent valuation estimates.
- In the foreign tourist survey, the average visitor had 15 years of education, earned over $59,000 per year, and spent almost $2,900 per visit to Madagascar. Tourists were willing to pay $80–120 to visit the proposed new park, primarily to see lemurs unique to Madagascar.
- The net welfare loss to all villagers from creating the park was about $0.6 million, using a present value of 10 percent. For all foreign tourists, the corresponding benefit was over $2 million.

Results such as these will help determine how scarce forest and capital resources can be better allocated and provide guidance on future pricing policy for park protection, biodiversity management, and revenue generation. But they also highlight an interesting issue, particularly for a country that is both economically poor and ecologically rich. Willingness to pay is fundamental to the economic approach, but tends to overemphasize the greater ability to pay of richer foreign visitors. If conflicting claims to park access were determined purely on this basis, the tendency would be to exclude poor local villagers (with minimum monetary compensation). Here, the social-equity aspects of sustainable development can be invoked to protect the basic rights of local residents, perhaps by ensuring a minimum degree of access to park areas.

## A unifying matrix

One tool that unifies the key elements of the environmental economist's approach to sustainable development is the action impact matrix (Table 2 provides a greatly condensed version). The matrix promotes a more integrated view, by meshing economic decisions with environmental and social impacts. The organization of the table facilitates the tracing of impacts and coherent articulation of policies and projects, while the individual elements focus attention on valuation and other methods of assessing specific impacts to determine action priorities.

As a first step, a preliminary matrix may be prepared, using existing data to assess the most significant impacts (even qualitatively, as shown in Table 2). Next, the tools of environmental economists may be used to quantify and value the magnitudes of such impacts more precisely, refining the matrix. Then policies and projects may be systematically modified to make them more sustainable. For example, economywide reforms involving exchange rate depreciation may make timber exports more profitable and lead to severe deforestation of open access areas. Possible remedies might include introducing complementary policies that control access or assigning property rights to the forest, thereby encouraging better management. Project 1 (a hydroelectric dam) may also exacerbate forest loss through inundation. The answer would be perhaps to modify the dam or implement a shadow project to reafforest an equivalent area elsewhere. In this fashion, the table helps articulate a consistent set of more sustainable policies and projects that address serious issues at all levels, in order of priority. ■

**Mohan Munasinghe**
*a Sri Lankan national, is Chief of the Bank's Environmental Economics Division. From 1982–86, he was Senior Advisor to the President of Sri Lanka. He has postgraduate degrees from Cambridge, MIT, and McGill.*

*For more information, see "Environmental Economics and Sustainable Development," by the author, World Bank Environment Paper No. 3, July 1993.*

# Measuring Environmentally Sustainable Development

ANDREW STEER AND ERNST LUTZ

***A BROADER understanding of development requires broader measures of development that encapsulate social, equity, and environmental concerns. Care must be taken that aggregate measures of progress do not conceal more than they reveal. But promising work is underway to "green" the national accounts.***

*"The gross national product does not allow for the health of our children, the quality of their education, or the joy of their play. It does not include the beauty of our poetry or the strength of our marriages; the intelligence of our public debate or the integrity of our public officials. It measures neither our wit nor our courage; neither our wisdom nor our learning; neither our compassion nor our devotion to our country; it measures everything, in short, except that which makes life worthwhile."*

*Robert F. Kennedy, 1968*

Measures of the overall income and output of a nation—the national accounts—give a highly imperfect indication of a nation's well-being. Besides the well-known gaps in coverage, such as unpaid household work, at least four sets of additional information are required to make any kind of conclusive judgment on trends in human well-being.

***Inequality and poverty.*** Aggregate income figures do not necessarily indicate trends in the incidence of poverty. While the correlation between national income growth and poverty reduction is strong, and earlier notions of income inequity tending to rise at early stages of development (the "Kuznets Curve") have now generally been debunked (see *World Development Reports 1990, 1991*), household surveys are required to shed light on income and expenditure patterns among the poor. Reasonably good progress has been made in the past decade to standardize survey methodologies, and about 40–50 countries (accounting for 80 percent of the population of developing countries) now undertake household surveys, producing fairly professional poverty assessments. Nonetheless, it is still difficult to compare the incidence of poverty across countries.

***Human resources.*** Increased aggregate income does not always buy improved human resource indicators. Recent concerns about declining educational attainment in industrial countries illustrates this point, as does the apparent variation in human development achievements at similar income levels (see, e.g., "The Progress of Nations," UNICEF, September 1993). Data on key indicators—such as infant mortality, literacy, school enrollment, and access to medical facilities—are available for almost all countries, but the reliability of these data varies greatly, with indices often calculated indirectly from highly partial data and sometimes from extrapolation of earlier estimates. Significant resources are being devoted to strengthening field measurement and to standardizing definitions, but much remains to be done.

***Environment.*** If growth in aggregate income significantly damages the environment, it may counteract some (or possibly all) of the welfare gains from income growth and undermine future growth prospects. Knowledge about environmental conditions is particularly inadequate, due partly to conceptual problems (e.g., how to define soil depletion, loss of natural habitat, and air pollution) and partly to the fact that mechanisms are often simply not in place to measure the raw facts. Increased efforts have been made in the past few years to help countries with environmental monitoring and to compile internationally comparable statistics. For example, the Global Environmental Monitoring System, managed by the UN Environment Program, collates data on air and water pollution in some 150 countries. But in most situations, resources have been inadequate, and the quality of information and comparability across countries remains poor.

***Social, political, and spiritual aspects of welfare.*** Measures of "economic" welfare fail to capture the social, political, and spiritual aspects of human well-being, which are often much more important. Many of these aspects cannot be measured in any quantitative sense, of course, which may tend to diminish their importance in the minds of policymakers. Recent years have seen the refinement and growing use of indicators of political and civil liberties, gender and racial bias, the incidence of crime and violence, and the like. At the same time, a growing number of governments and aid agencies have been developing and using the tools of social assessment in investment planning and appraisal. These tools have tended to focus on project-level decisions (e.g., how social and cultural cohesion might be affected by particular investment programs). Much less is known about the social impacts of broader development trends, such as urbanization and market liberalization.

Where does this state of affairs leave policymakers? Clearly, they need better basic facts on the development concerns listed above, but they also need to see these basic facts aggregated into policy-relevant indicators of progress. Both of these steps—measurement and aggregation—pose tough challenges for the noneconomic dimensions of development. This article reviews some of the current issues in the search for development indicators and describes one particularly promising area in which the aggregates are environmentally adjusted.

## Indicators of development

One of the reasons there has been an excessive focus on the economic aspects of development is because it is easier to measure what is transacted in the marketplace than what is not. What to measure and where to measure it are more intuitive, and the "numeraire" (common unit of account) enabling aggregation is straightforward—money.

Such easy calculations are not available for many other aspects of development, especially social concerns and environmental issues. For example, with over 300 different toxic pollutants—many of them highly localized—how can pollution in any aggregate sense be monitored? Or, in view of the many types of soil degradation (e.g., erosion, salinization, loss of moisture or nutrients, and waterlogging), how can the state of a nation's land resources in any aggregate sense be captured?

Aggregation, of course, requires a numeraire. In this regard, important work is now underway to derive relationships ("dose-response functions") between various forms of environmental damage and human health, economic productivity, and human amenity values, which would provide a numeraire, thereby enabling aggregation. Thus, for example, different pollutants would be multiplied by both their health impacts and the affected population. Areas affected by different types of soil damage would be multiplied by estimated impacts on such factors as future yields. However, resources allocated to such work have been modest and research programs often poorly coordinated.

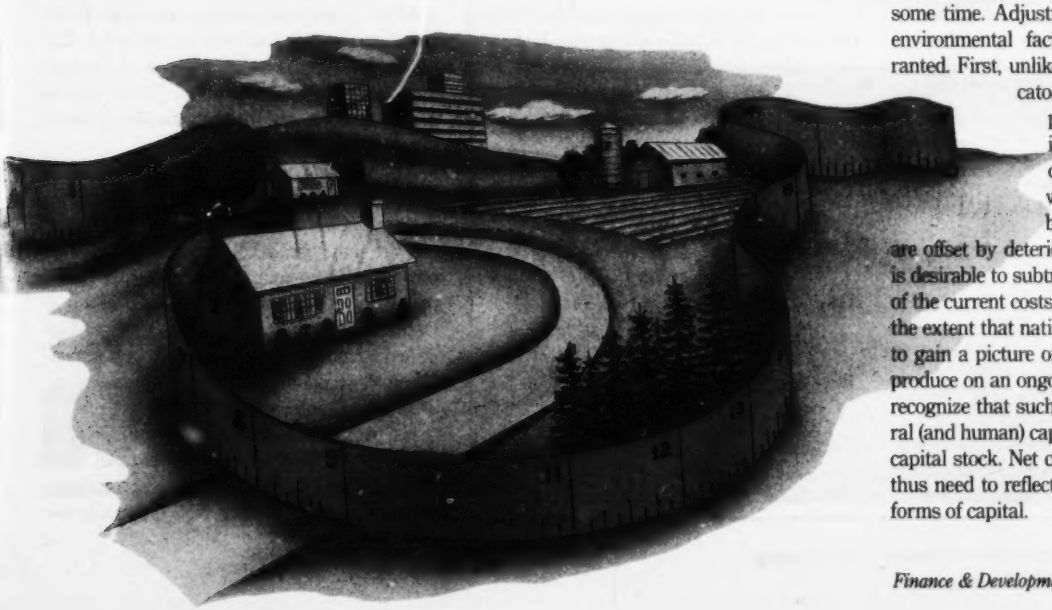
Care needs to be taken in searching for aggregate measures of progress, so that the single indices chosen do not conceal more than they reveal. Housing is an example. Traditionally, simple measures of housing have been the norm: Do people have housing—yes or no? But with the movement away from direct government provision of housing toward "enabling strategies," and a growing recognition that housing involves much more than bricks and mortar, it became clear that richer measures were needed. This realization led, in 1990, to the creation of a Housing Indicators Program, sponsored jointly by the UN Center on Human Settlements and the World Bank.

Data have now been collected from 53 countries covering 80 percent of the world's population, drawing on extensive surveys of demand and supply factors and the recognition that there are many dimensions to good housing (e.g., reasonable space and ventilation, access to a footpath, proximity to employment, and affordability). Researchers on this project, while attracted to the possibility of deriving an aggregate measure of housing services, have concluded that in the absence of a meaningful numeraire, any such aggregate index would not help policymakers. The methodology adopted is currently being extended to other areas, including urban environmental issues, water, sanitation, and transportation.

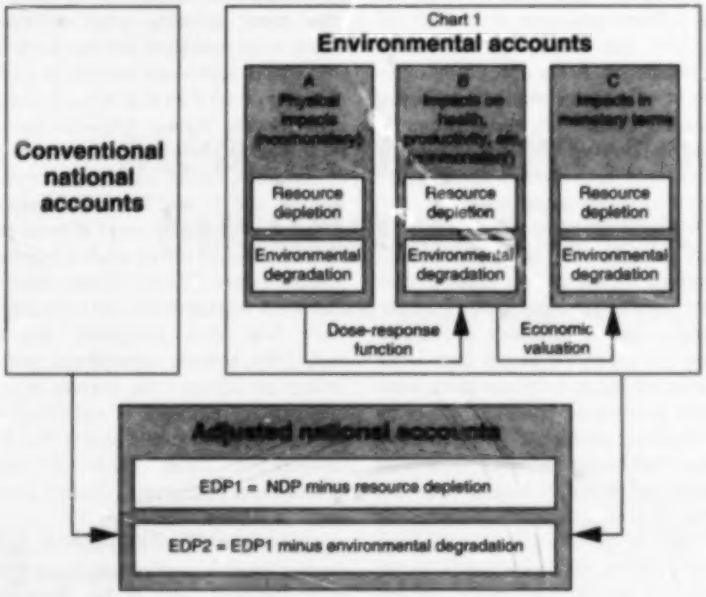
If adding apples and oranges is a problem at the subsectoral level, it is much more so at higher levels. Various proposals have been made over the years for aggregating measures of education, health, nutrition, income, civil liberties, and the like. But in the absence of a substantive numeraire, most of these proposals have involved merely adding together normalized indices. Critics of these indices argue that such aggregations are inevitably arbitrary and thus potentially misleading. Supporters, however, contend that even if the indices are arbitrary, the purpose is to force nonmonetary elements of well-being to the forefront of development policy. The Human Development Index (HDI) of the UN Development Programme, the best known of such indicators, illustrates this point. By aggregating indices of life expectancy, educational attainment, and per capita income—the same indicators used in the World Bank's "Basic Indicators" table—the HDI has provoked an outpouring of views (many critical) on its methodology and findings, thus serving its purpose well.

## "Greening" the accounts

Deriving aggregate indices using a common numeraire is conceptually preferable to the ordinal approach of the HDI but is practically much more difficult. Adjusting the national accounts to reflect broader development concerns is one commonly proposed route. No credible approach is available to make adjustments based on social or income distributional concerns, but methods for making environmental adjustments have been available for some time. Adjustments to take into account environmental factors are particularly warranted. First, unlike human development indicators, which are generally positively correlated with income, environmental conditions sometimes worsen with economic growth. If the benefits of increased income are offset by deteriorating health conditions, it is desirable to subtract from income a measure of the current costs of such damage. Second, to the extent that national accounts data are used to gain a picture of the economy's capacity to produce on an ongoing basis, it is necessary to recognize that such capacity depends on natural (and human) capital as well as on manmade capital stock. Net capital accumulation figures thus need to reflect the changing stocks of all forms of capital.



## "Greening" the national accounts




Making environmental adjustments to national accounts can occur at three levels of sophistication:

- ***Physical accounts.*** Nonmonetary accounts can be established, measuring resource depletion and environmental effects of various aspects of national production and income. Thus for any sectoral activity, it is possible to determine its physical impact. These impacts may be added for the economy as a whole.
- ***Nonmonetary impacts.*** These environmental impacts can be recast in terms of their estimated impacts on various nonmonetary indicators, such as human health, agricultural productivity, global warming, or ozone depletion. These impacts are usually calculated by multiplying physical outcomes (e.g., soil erosion) by impact coefficients or "dose-response" functions (e.g., impact on yields).
- ***Monetary valuation.*** Environmental impacts can then be expressed in monetary terms through the use of valuation techniques, in turn providing a means of adjusting the national accounts themselves.

Major empirical problems exist at all three levels—on the basic physical impacts, on dose-response functions, and on monetary valuation. But it is the third level, valuation, where particularly tough conceptual and methodological problems occur.

| | | In million pesos | | Index |
|---|---|---|---|---|
| Net domestic product (NDP) | | | 42,990 | 100.0 |
| Minus resource depletion | | | | |
| | Oil | 1,470 | | 3.5 |
| | Timber | 194 | | 0.4 |
| | Land use change | 764 | | 1.8 |
| Equals EDP1 | | | 39,882 | 94.3 |
| Minus environmental degradation | | | | |
| | Soil erosion | 449 | | 1.1 |
| | Solid wastes | 197 | | 0.5 |
| | Ground water use | 191 | | 0.5 |
| | Water pollution | 662 | | 1.6 |
| | Air pollution | 1,686 | | 3.9 |
| Equals EDP2 | | | 36,507 | 86.7 |

Source: "Toward Improved Accounting for the Environment," Chapter 8, Jan van Tongeren et al.

At this stage, most efforts at natural resource and environmental accounting have been restricted to creating physical accounts that parallel conventional national accounts rather than to estimating the money values of resource loss and environmental damage, thereby adjusting the "core" accounts themselves (see Chart 1).

Norway, for example, the country with perhaps the longest history of interest in resource accounting, has put its efforts into refining physical stock estimates in key sectors such as oil, minerals, fish, forestry, and hydropower. The Netherlands, another country with a history of concern in this area, has endeavored for over a decade to derive monetary measures of the loss of "environmental functions" (so far unsuccessfully). France is trying the most ambitious system yet—"patrimony accounting"—which is aimed at analyzing and describing the natural environment in its three basic dimensions: economic, social, and ecological. The system is to have seven levels, ranging from specific resource data at level one to aggregate welfare indicators at level seven. However, only limited resources have been available for implementation, which has so far been limited to the physical data at level one. US efforts in this field have been restricted to collecting data on pollution abatement expenditures, although President Clinton recently committed his administration to producing environmentally adjusted accounts during his term in office.

But there is now movement on several fronts. One reason is that in "Agenda 21," the major policy document of the June 1992 Rio "Earth Summit," 178 nations committed themselves to "expand existing systems of national accounts in order to integrate environmental and social dimensions in the accounting framework, including at least satellite systems of natural resources in all member States." Second, in 1993, the UN Statistical Commission adopted a revised System of National Accounts (SNA) after a decade of work, altering the accounting procedures for member countries.

Although countries will not be required to fully integrate environmental concerns into the core accounts, it is suggested that they prepare "satellite" accounts, comprising both physical and monetary units, consistent with the core accounts. For this purpose, in December 1993 the UN Statistical Office issued a handbook on integrated environmental and economic accounting, providing detailed guidance.

As part of the preparations for the SNA revision, the World Bank collaborated with the UN Statistical Office and country authorities in Mexico and Papua New Guinea to see

how practical the new methodology and handbook would be. The results of the two case studies (backed up by another study in Thailand) proved not only the viability of the approach but also the sensitivity of the findings to assumptions made.

Since most countries' national accounts do not even calculate depreciation of manmade capital to derive net domestic product (NDP), the first task of these studies was to make such estimates. Two sets of "environmentally adjusted net domestic product" (EDP) calculations were made. The first (EDP1) deducted estimates of resource *depletion* (e.g., oil, mineral, and timber extraction) from NDP. The second (EDP2) further deducted estimates of the monetary value of environmental *degradation* (e.g., air and water pollution, waste disposal, soil depletion, and groundwater use).

These calculations are much easier said than done, of course. Numerous judgments were required in choosing methodologies for estimating money values for both depletion and degradation, and in most instances indirect estimates were required. For example, ideally, the impact of pollution on health and future productivity would be estimated and a monetary value placed on such costs (discounted back to the present when damage occurred in future years), which would then be deducted from income and investment. Unfortunately, knowledge is inadequate for such calculations even in the most advanced industrial countries. Instead, an indirect measure—estimating the cost of reducing pollution to "acceptable" levels—was used. A similar approach was employed to calculate the costs of soil erosion, but a host of conceptual challenges and methodological choices remain.

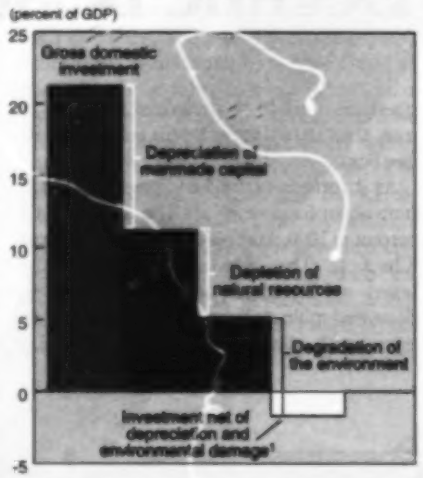
In the case of Mexico—a relatively advanced developing country with severe environmental problems—EDP1 was estimated as 94 percent of NDP for 1985 (the only year for which data were adequate), and EDP2 was estimated at 87 percent of NDP (see table). In Papua New Guinea—a country at a relatively early stage of development, with a large extractive industry—EDP1 was estimated at 92–99 percent of NDP for the 1986–90 period and NDP2 at 90–98 percent. These figures raise awareness of the need to adjust for environmental costs but in themselves give little guidance to policymakers. Sectoral accounts, however, provide more insight.

"Green" accounting also offers policymakers insights into the long-term productive capacity of a nation—through the investment and capital accounts. Chart 2 shows the estimated impact of resource depletion and environmental damage on Mexico's productive base in 1985. But care must be taken in interpreting the findings. A careless interpretation might conclude that with an apparently negative real investment rate after adjusting for national resource depletion and environmental degradation, the productive capacity of the economy had actually declined. But such a conclusion would require that other aspects of the nation's productive capacity also be assessed. Human capital formation and technological progress are particularly important. Broadening our understanding of productive capacity to include these elements should have a high priority.

Chart 2

**Shrinking investment?**

(estimated impacts of adjustment for depreciation of manmade and natural capital in Mexico for 1985)




Source: "Toward Improved Accounting for the Environment," Chapter 6, Jan van Tangeren *et al.*

[1] This is not intended as an accurate representation of the change in the nation's productive capacity, since it excludes important components of human capital accumulation and technological change.

## A richer measure

It is clear that a broader understanding of development requires broader measures of development. Heavier investment than in the past is required simultaneously at three levels: basic data collection, research into the relationships between such data and human welfare and economic development, and the derivation of *policy relevant* indicators at different levels of aggregation.

In emphasizing the limitations of overall income as an indicator of development, however, it is important not to "throw the baby out with the bathwater." Income is still the best measure we have of people's command over many of their commodity needs. Appropriately adjusted, real income remains a useful indicator of progress, especially for governments of democratic countries where citizens are better able to voice their preferences on how a nation's wealth and income should be allocated. There is even some indication that rising incomes can help promote such regimes.

However, neither income nor any other single indicator can or should encapsulate development progress. A richer set of indicators is needed, and remedial efforts are urgently required on those components of development that cannot be measured in the marketplace. ■

**Andrew Steer**
*a UK national, is Deputy Director of the Bank's Environment Department and was Staff Director of the* World Development Report 1992. *He holds a PhD in Economics from the University of Pennsylvania.*

**Ernst Lutz**
*a Swiss national, is a Senior Economist in the Bank's Land, Water, and Natural Habitats Division, Environment Department. He holds a PhD from the University of California at Berkeley.*


*For more details, see "Valuing the Environment: Environmental Accounting with an Operational Perspective," by Peter Bartelmus, Ernst Lutz, Jan van Tongeren, World Bank Working Paper, September 1993; "Is Poverty Increasing in the Developing World?" by Shaohua Chen, Gaurav Datt, and Martin Ravallion, World Bank Policy Research Department Working Paper, 1993; "Toward Improved Accounting for the Environment," edited by Ernst Lutz, World Bank; and* Poverty Comparisons: Fundamentals in Pure and Applied Economics, *by Martin Ravallion, Harwood Academic Press, New York, NY, 1993.*

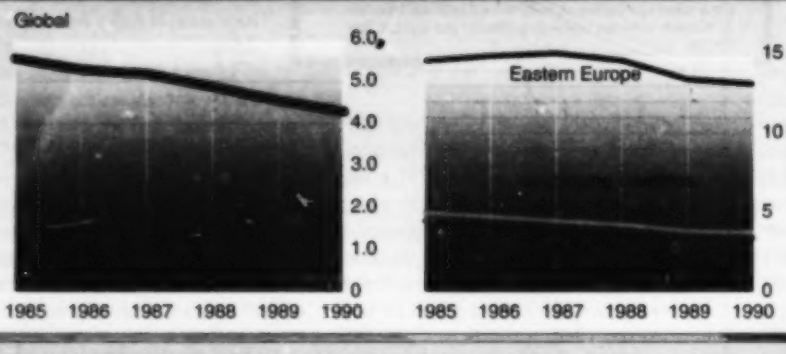
# Military Expenditures: Will the Post-1985 Decline Be Sustained?

AFTER sharp increases during the first half of the decade, world military expenditures as a proportion of GDP fell steadily from 1985–90. Although there are no comprehensive data from 1991 onward, there are indications that the trend is continuing. Does this represent the beginning of a sustained downward trend in world military expenditures? Or is it just a temporary aberration? To help answer these questions, an IMF study looked at trends in more than 120 countries for the period 1985-90 (see box).

As it turned out, military expenditures fell from about 5.6 percent of GDP in 1985 to 4.3 percent in 1990, a decrease of about 23 percent (Chart 1). The reduction was across the board—on average, almost all regions decreased military spending by 10 percent or more, with developing countries reducing expenditures as much as industrial countries.

But what were the reasons behind this decline? First, empirical tests confirm that financial and economic variables have exerted an important influence on military spending. In the developing world, military spending is generally greater as a share of GDP in countries with higher GDP, population, inflows of external financing, and ratio of central government expenditure to GDP. Small,

Chart 1
Military expenditure as a percent of GDP decreased in almost all regions




| Developing countries | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 |
|---|---|---|---|---|---|---|
| Asian developing | 4.4 | 4.3 | 4.1 | 3.8 | 3.7 | 3.5 |
| Middle East | 11.0 | 9.7 | 9.6 | 9.2 | 8.7 | 8.1 |
| North Africa | 5.8 | 5.4 | 4.7 | 4.6 | 4.4 | 3.9 |
| Sub-Saharan Africa | 3.1 | 3.4 | 3.6 | 3.5 | 3.4 | 3.2 |
| Western Hemisphere | 2.0 | 2.2 | 2.0 | 1.9 | 1.8 | 1.8 |

Chart 4
Political changes affect military spending, 1985-90

low-income, and heavily indebted countries generally spend less. In recent years, signs of economic strain in many developing countries, as well as the economies in transition, appear to have led governments to shift resources away from defense budgets (Charts 2 and 3).

Second, econometric results indicate that government policies toward military spending are affected by political changes. Chart 4, a cross tabulation of the political variables and changes in military spending from 1985–90, shows that more countries lowered their military expenditures as a percent of GDP than raised them. Countries that lowered military expenditures "the most include economies in transition, other countries that changed their form of government, democracies, and countries at war.

The study identifies several reasons for such decreases. The profound internal political changes in the latter part of the 1980s, as many former socialist countries embraced a more democratic form of government, have generally retarded the level of military spending to GDP among these countries. The changes in Eastern Europe and the former Soviet Union are well known. In addition, between 1983 and 1989, eight new democracies emerged among developing countries, replacing seven military governments, bringing the total number of democracies in this sample to 41. As for countries at war and democracies, the decrease in military tensions since the end of the Cold War, along with cuts in military aid, are likely reasons for their drop in military spending. ■

*For a thorough analysis, see "Military Expenditures 1972-1990: The Reasons Behind the Post-1985 Fall in World Military Spending," by Daniel P. Hewitt, IMF Working Paper, WP/93/18. The study offers a variety of econometric estimates of the determinants of military expenditure in 124 countries.*

Chart 2

## As central government expenditures in percent of GDP fell...

| | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 |
|---|---|---|---|---|---|---|
| Total | 31.3 | 31.3 | 30.9 | 29.9 | 28.7 | 29.6 |
| Industrial | 29.4 | 29.1 | 28.9 | 28.0 | 27.7 | — |
| Eastern Europe | 48.6 | 50.1 | 50.2 | 49.5 | 43.8 | 47.6 |
| Developing countries | 29.2 | 29.0 | 27.8 | 26.4 | 24.2 | 23.4 |
| Asian developing | 22.8 | 23.2 | 21.2 | 20.1 | 20.4 | 19.4 |
| Middle East | 38.5 | 35.4 | 35.6 | 35.1 | — | — |
| North Africa | 43.7 | 43.7 | 38.7 | 40.0 | 37.1 | 34.7 |
| Sub-Saharan Africa | 24.1 | 27.3 | 29.3 | 29.3 | 28.5 | 29.7 |
| Western Hemisphere | 29.6 | 29.2 | 28.5 | 26.9 | 25.0 | 23.5 |

Chart 3

## ... a greater share of the burden of adjustment was placed on the military budget

(Military expenditure in percent of central government expenditure)

| | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 |
|---|---|---|---|---|---|---|
| Total | 17.8 | 17.1 | 16.7 | 16.1 | 15.3 | 14.5 |
| Industrial | 15.0 | 14.1 | 13.4 | 12.9 | 12.7 | 11.7 |
| Eastern Europe | 30.1 | 29.7 | 30.1 | 29.7 | 30.4 | —[1] |
| Developing countries | 17.0 | 16.6 | 16.6 | 15.8 | 16.3 | 16.1 |
| Asian developing | 19.1 | 18.6 | 19.5 | 19.0 | 17.9 | 18.0 |
| Middle East | 28.7 | 27.3 | 27.1 | 26.3 | —[2] | —[2] |
| North Africa | 13.2 | 12.3 | 12.0 | 11.5 | 12.0 | 11.2 |
| Sub-Saharan Africa | 12.7 | 12.6 | 12.2 | 11.9 | 12.0 | 10.9 |
| Western Hemisphere | 6.9 | 7.4 | 7.1 | 7.1 | 7.1 | 7.5 |

1— Yugoslavia and East Germany are missing.
2— Central government expenditure statistics are not reliable for Iraq, Syria, and Yemen.

**hers**

Change in military spending [1] (By number of countries)

| Decrease | No change | Increase | Military expenditures 199[illegible] (billion dollars) |
|---|---|---|---|
| 9 | 5 | 4 | 1[illegible]9 |

**Socialist (transition) [2]**

Change in military spending [1] (By number of countries)

| Decrease | No change | Increase | Military expenditures 1990 (billion dollars) |
|---|---|---|---|
| 7 | 6 | 1 | 74.0 |

**Transition countries [3]**

Change in military spending [1] (By number of countries)

| Decrease | No change | Increase | Military expenditures 199[illegible] (billion dollars) |
|---|---|---|---|
| 6 | 2 | 1 | 1[illegible] |

**Post 1990 transition countries [4]**

Change in military spending [1] (By number of countries)

| Decrease | No change | Increase | Military expenditures 1990 (billion dollars) |
|---|---|---|---|
| 9 | 3 | 3 | 18.1 |

**Total**

Change in military spending [1] (By number of countries)

| Decrease | No change | Increase | Military expenditures 1990 (billion dollars) |
|---|---|---|---|
| 62 | 38 | 20 | 959.3 |

[illegible] Countries that changed [illegible] from 1983-1989.
3 Countries that introduced democratic reforms from 1990-1992 or are in the process of introducing democratic reforms.

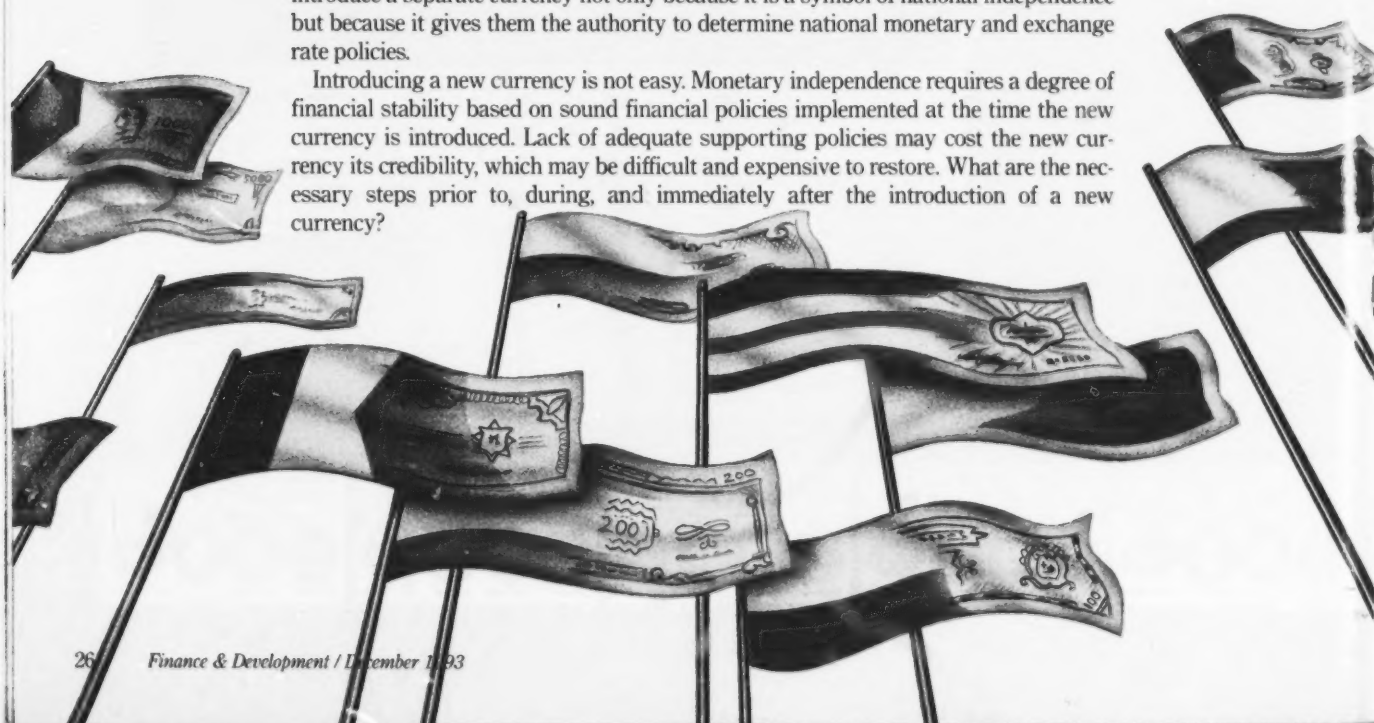
# Introducing New National Currencies

HERNÁN CORTÉS-DOUGLAS AND
RICHARD K. ABRAMS

***AS A NUMBER of countries in the former USSR and Eastern Europe have ventured out on their own, gaining or regaining political independence, many have been struggling to establish economic independence. Some have made moves to introduce their own currencies, but the process is difficult, demanding both sound economic policies and new institutional arrangements.***

In recent years, Croatia, Estonia, the Kyrgyz Republic, Latvia, Lithuania, and Slovenia have chosen to introduce their own permanent currencies; others have introduced provisional currencies, and many more are likely to follow suit soon. Countries typically introduce a separate currency not only because it is a symbol of national independence but because it gives them the authority to determine national monetary and exchange rate policies.

Introducing a new currency is not easy. Monetary independence requires a degree of financial stability based on sound financial policies implemented at the time the new currency is introduced. Lack of adequate supporting policies may cost the new currency its credibility, which may be difficult and expensive to restore. What are the necessary steps prior to, during, and immediately after the introduction of a new currency?



## First things first

The success of a new currency depends, to a large extent, on careful preparation. Certain key issues need to be addressed, including the choice of an exchange rate regime, the development of a central bank, financial market operations, supporting legislation, and the use of coupons as an intermediate step in the move toward a new currency.

***The exchange regime makes a difference.*** When a country introduces a new currency, usually only the central bank is given the authority to issue it. The central bank thus acquires the power to set and control either the quantity of money and its exchange rate—the price of domestic money in terms of foreign money. Inevitably, the choice of an exchange rate regime involves a trade-off in terms of the degree of control the country will have over its monetary and exchange rate policies. Exchange controls are sometimes used to weaken this trade-off. In discussing this complex topic, we have focused on the more transparent regimes under which policy trade-offs and constraints are somewhat clearer than they are under hybrid systems.

In a pegged currency system, monetary policy is aimed at maintaining the exchange convertibility of the new currency at a fixed exchange rate. Under this system, a country pegs its currency to that of a larger or more developed country to maintain monetary stability. Conversely, Russia's monetary instability was a major factor behind the choice made by many of the states of the former USSR to introduce new currencies that would insulate them from inflationary pressures.

At the other end of the spectrum, in a freely floating exchange rate regime, the exchange rate adjusts to variations in the supply and demand for the domestic currency. This regime allows the country to pursue an independent monetary policy. Other exchange rate regimes are variations of these two pure systems and allow for a limited degree of policy independence.

Relatively pure pegged or floating systems were chosen by the countries that abandoned the ruble area and introduced new currencies. Estonia established a currency board in June 1992, with the kroon pegged to the deutsche mark; Latvia let the Latvian ruble float freely against other currencies in October 1992 and, after stability was regained, introduced the lats in March 1993. Similarly, Lithuania floated the talonas against other currencies in October 1992 and introduced the litas in June 1993. The Kyrgyz Republic introduced the som as a freely floating currency in May 1993. Ukraine adopted free floating of its karbovanets in November 1992 and plans to introduce the grivna in the future. In part, many of these countries adopted a freely floating regime to protect their limited foreign exchange reserves.

***How well do foreign exchange markets work?*** The credibility and strength of the new currency, as expressed by its exchange rate, is enhanced by the following:

- exchange rate unification, which increases confidence in the new currency and eliminates the distortions created by dual or multiple exchange rates.
- currency convertibility, which eliminates controls over international transactions, eases the country's integration into the international economy, and minimizes governmental interference in the exchange regime. This is particularly important for economies in transition, where an increased role for private sector initiative, in a context of reduced government interference and widespread free markets, is a necessary part of structural reform.
- a competitive and efficient exchange market that directs foreign exchange to its most profitable uses. Such a market needs nonbank dealers licensed to trade in the new currency, in addition to a traditional and perhaps oligopolistic banking structure.
- a streamlined and organized central bank or currency board. As banker to the government, a central bank needs to undertake government foreign exchange transactions efficiently (initially this activity is often a significant part of the market). The bank will organize a foreign exchange department, establish the prudential monitoring and supervision of foreign exchange dealers at banks and elsewhere, and set out principles and procedures for intervening in the markets and managing international reserves.

***Legislation supports the changes.*** Legislation makes the new currency legal tender, gives the central bank the authority to issue the new money, governs foreign exchange transactions and empowers the central bank or another governmental body to draft supporting regulations, and specifies the treatment of different types of financial assets, liabilities, and contracts during and after the introduction of the new currency. All the countries introducing new currencies have adopted such legislation before or shortly after issuing their currencies.

In a single currency area, joint decisions must be reached on the disposition of currency notes taken out of circulation when new notes are introduced; on payments, clearing, and settlement arrangements; on the disposition of the assets and liabilities of the former central bank; and on the treatment of residents and nonresidents with respect to the rights of holding deposits in the new and old currencies.

***Are coupons a possibility?*** Coupons are generally issued either to serve as an "intermediate" step, ahead of the new national currency, or to alleviate a shortage of old currency bank notes. Several countries have issued coupons as an intermediate step in the face of continuing macroeconomic instability and high inflation, postponing the introduction of the permanent currency until their economies improve. Initially, coupons are issued at par with the old currency and circulate as legal tender along with the familiar bank notes. Just prior to the issuance of the new national currency, coupons may become the nation's sole legal tender. Latvia, Lithuania, and Ukraine floated their provisional currencies after declaring them the sole legal tender in their countries.

| Country | Legal tender as of September 1993 | New permanent currency |
|---|---|---|
| Armenia | Ruble | 1993 ruble |
| Azerbaijan | Manat and 1993 ruble | Manat |
| Belarus | Ruble and rubel (coupon) | 1993 ruble |
| Estonia | Kroon | Kroon |
| Georgia | Coupon (IV/93) | Lari |
| Kazakhstan | Ruble | 1993 ruble |
| Kyrgyz Republic | Som | Som |
| Latvia | Lats | Lats |
| Lithuania | Litas | Litas |
| Moldova | Coupon (7/27/93) | Leu (12/93) |
| Russian Federation | 1993 ruble | 1993 ruble |
| Tajikistan | Ruble | 1993 ruble |
| Turkmenistan | Ruble | Manat (11/93) |
| Ukraine | Karbovanets | Grivna |
| Uzbekistan | Ruble | 1993 ruble |

Source: IMF Working Paper WP/93/49, "Introduction of a New National Currency: Policy, Institutional, and Technical Issues," by Hernán Cortés-Douglas and Richard Abrams, June 1993.

## Making money

Once these decisions are made, practical considerations for the production of the new currency and preparations for the actual conversion need to be addressed. What value should be placed on the currency initially? How many notes should be produced? And how should the bank notes be denominated and designed?

***Valuing the currency.*** The conversion process will be simpler if a simple conversion rate is used. The easiest solution is to have the new currency related to the old currency by a power of ten. It is also useful to have a new currency's sub-unit (presumably one hundredth of the currency unit) roughly equal the value of the smallest common purchase. In Lithuania, for example, the talonas—a temporary coupon—was issued at par with the ruble in May 1992, and the litas—the permanent new currency—was issued at 1 litas per 100 talonas in October 1992, under a flexible exchange regime. On the other hand, Estonia fixed its new currency—the kroon—against the deutsche mark at an 8:1 ratio in June 1992 and used the deutsche mark/ruble exchange rate to determine the conversion rate against the ruble.

***Deciding the quantity of notes.*** Initially, enough new currency notes must be printed to replace all the bank notes outstanding in the country at the official conversion rate and allow for conversion of any likely illegal inflows of old currency notes (less any unconverted old currency notes held by residents). Following conversion, more notes may be needed to meet any rise in demand and to maintain sufficient inventories (plus replacement notes pending the next printing of bank notes). Inventory models for bank notes are used for estimating the demand for bank notes and the quantity of each denomination.

***Designing the bank notes.*** Bank notes are designed both to be easy to use and to make counterfeiting difficult and expensive. Bank note users include the general public, cashiers, the central bank, and even vending machines. The public's main interest is ease in recognizing the denomination of a bank note; printing the value in large numerals on the front and back of the note and using different colors for the denominations make notes easier to teli apart. A date, a serial number, selected signatures, and some combination of portraits, pictures, and images are also helpful identifying features and can be aesthetically pleasing.

## The conversion itself

After the new currency is produced, preparations for the actual conversion need to be addressed.

***Making it public.*** The public needs to know how to exchange old currency bank notes, deposits, and coupons for new currency bank notes and deposits during the conversion. The announcement of the currency conversion usually explains how residents and nonresidents are to convert bank notes and coupons and how any bank note holdings in excess of the amount that may be converted are to be treated. In addition, the announcement describes how deposits and obligations in the old currency—as well as nonbank financial assets and liabilities and other contracts—are to be converted and lists the regulations governing transactions in the old currency and other foreign currencies during and after the conversion period.

The period between the announcement and the introduction of the new currency can be used to explain the conversion process to people and enterprises. During this period, the public may deposit any additional cash holdings in accounts with banks, relieving pressure on banks during the actual conversion.

The conversion period—the period of time during which actual conversion takes place—has been three to seven days for most countries. The Kyrgyz Republic, one of the last states of the former USSR to introduce a permanent currency (May 1993), used three conversion periods to exchange soms for rubles—the first two were of five days each (May 10–14, May 17–21) and the final one two days (June 3–4). The official conversion period was the first, with the second one open to individuals who justifiably were not able to participate in the first. In the third period, the som had already appreciated (260 rubles per som), compared to the previous periods (200 rubles per som). Unfortunately, the announcement of

# "Be Ready To Be Blamed for Everything":

EINARS REPSE
*President, Bank of Latvia*

A new currency must be loved and trusted. Inspiring that love and trust—difficult to achieve, and very easy to destroy—requires that a central bank have full control over monetary decisions in order to build credibility and confidence in the monetary system.

With that idea in mind, my "short guide to introducing a currency" would include this set of "model recommendations":

- liberalize your markets (foreign exchange and others);
- set up an independent central bank;
- introduce your currency;
- adjust your financial system to market principles;
- introduce floating exchange rates;
- follow a tight or extremely tight monetary policy; and
- be ready to be blamed for everything.

How were these recommendations applied in Latvia? We started by lifting all restrictions on holding and dealing in foreign currencies, and we freed prices. Then we set up an independent central bank. Its most important feature is its autonomy; no one can influence or overrule its decisions because the governing body is protected from political influences. Appointed by parliament for six years, the members cannot be dismissed and are not permitted to engage in any other financial activities, private or governmental.

Having secured the Bank of Latvia's independence, we introduced our own currency as smoothly as possible, avoiding any disruptive changes. The Russian ruble remained legal tender and was not confiscated, and the payments system remained the same. We realized that any confiscatory measures would only damage the reputations of the Bank, the currency, and the country.

We then adjusted our financial system to the principles of a market economy, liberalizing interest rates, cash withdrawal procedures. Since we had not fixed our exchange rate, we had to make sure that our monetary policy was an appropriate one to protect the value of our currency. We pursued a tight monetary policy, which led to an increase in the value of our currency.

We learned—despite our successes—to be ready to be blamed for everything. The Bank of Latvia was criticized severely initially, but now even our opponents agree that our policies have worked.

Now let me explain why and how the Latvian currency was introduced. The beginning of 1992 saw a severe shortage of Russian ruble bank notes. To combat that shortage, the Latvian ruble was introduced on May 7, 1992, as the Latvian equivalent of the Russian ruble bank note. Although it was declared equal in value to the Russian ruble, many people did not believe that the new money could be as successful as the "good old" Russian ruble. To prove them wrong,

the conversion was made only three days before the actual conversion, accounting for much of the slow start of the changeover.

***Spending during conversion.*** The new currency is made legal tender from the first day of the conversion period. Allowing the use of both the old and the new currency during the conversion reduces pressure on residents to dispose of their old currency notes. It also allows shops to help with the conversion process by exchanging old notes for new notes.

In Latvia, Lithuania, and Ukraine, coupons were issued and permitted to circulate, allowing people to continue to make transactions without first having to obtain new currency bank notes. The coupons also relieved pressure for conversions on the first day, reducing both waiting lines and the immediate burden on the institutions doing the converting. After the conversion period, the coupons were withdrawn from circulation and turned in at banks. Usually, there is a deadline on how long coupons may be used, not only to avoid confusion but also because coupons can be easy to counterfeit.

***Limiting old currency inflows.*** Authorities may be concerned about the inflows of old currency bank notes from nonresidents purchasing goods during the conversion period. To avoid large inflows, governments usually allow only residents over a certain age to convert. Nonresidents are not permitted to acquire new currency notes, with the exception of tourists, who are usually allowed to change a limited amount. Estonian authorities declared the kroon the only legal tender during the conversion and used a short conversion period. Some countries—for example, Slovenia—have even closed their borders during the conversion period, but such extreme actions are expensive and generally difficult to enforce.

***Bank loans and deposits.*** Domestic bank loans and deposits (of residents and nonresidents) denominated in the old currency are converted into new currency on the first day of the conversion period to avoid leaving domestic banks with open foreign currency positions on their balance sheets. Both residents and nonresidents are covered, and depositors wishing to keep their deposits denominated in the old currency are usually given the opportunity to do so by asking to be paid off in old currency bank notes within a short period at the official conversion rate. (The currency can be made available by the central bank or the government from the old currency notes acquired during the conversion.) In Estonia, nonresident ruble accounts were not converted; instead, they were repatriated, with a corresponding reduction in Estonia's claims on Russia. In Ukraine, all nonresident accounts were converted into karbovanets, with Russia's agreement.

***Other old currency contracts.*** All financial contracts between residents that are expressed in the old currency need to be converted to new currency terms. Contracts between a resident and a nonresident in the country undergoing the conversion can remain denominated in old currency.

***Disposing of old notes.*** Old currency notes that the central bank acquires during the conversion process may be used to repay any debts that originated and to pay those depositors—resident and nonresident—wishing to retain old currency assets. The latter needs to be done immediately after conversion to avoid giving the impression that old currency is being "dumped." In general, people prefer the new currency, so this issue has not arisen. Remaining currency notes have usually been held by governments to be disposed of according to the agreement negotiated with the members of the former currency regime. Assurances from these countries that the real value of the currency will not be allowed to diminish pending the outcome of the negotiations can be sought, especially when inflation is very high.

## What have we learned?

Prudent monetary and fiscal policies in Estonia and Latvia were the key elements of success in introducing new currencies and in bringing the average levels of inflation down to a monthly rate of one percent. Financial profligacy in Ukraine, on the other hand, resulted in raging inflation as the country's provisional currency—the karbovanets—depreciated even more rapidly than

# How Latvia Introduced Its Currency

we pursued three major policies:

- All salaries and wages were paid out only in new Latvian bank notes, which instantly became impossible to ignore.
- The banks were instructed to convert unlimited amounts of Latvian rubles into Russian rubles.
- We set up a Russian ruble stabilization fund for conversion purposes.

These policies worked. As soon as the Latvian ruble was introduced, it was accepted as legal tender, even at a flea market. I tested it myself. Our actions relieved us of the shortage of bank notes and established Latvia's monetary independence. The new currency enabled us to monitor our monetary situation, since we could now count the bank notes in circulation. Soon we began to notice an increasingly positive payments imbalance with the ruble zone, both in cash and bank transfers. Money flowed toward Latvia, bidding up the value of the Latvian currency relative to the Russian ruble.

To formalize our shift away from the ruble zone, we discontinued the fixed 1:1 exchange rate against the Russian ruble, introducing a freely floating exchange rate instead. Then, on July 27, 1992, we opened separate bank accounts with each of the "republics" of the former ruble zone and introduced separate exchange rates against each of these currencies. Only when our ties with the Russian currency were severed did real stabilization become possible.

Our idea was to stabilize the Latvian ruble first and only then to switch over to the lats, our permanent national currency. We decided to begin switching over to the lats in March 1993, allowing the new currency to coexist alongside the Latvian ruble. One lats was introduced as equal to 200 Latvian rubles. Again we made the transition as smoothly as possible, substituting one bank note for another and adjusting the price scale.

From June 28, 1993, all contracts and prices were redenominated in lati, and the posting of prices in foreign currency was forbidden. Finally, after October 18, 1993, Latvian rubles were no longer legal tender, but the Bank of Latvia continued to exchange Latvian ruble notes into lati at the original conversion rate.

Our main achievements since the introduction of our own currency have been a significant decline in the inflation rate and a stable exchange market. On average, inflation has been reduced from about 20 percent in July 1992 to about 0.5 percent per month over April–September 1993. Following the initial depreciation, the nominal exchange rate for the Latvian ruble—and later the lats—has strengthened significantly against convertible currencies, with the rate currently at about US$1 = Ls 0.61. At the same time, we have been able to reduce gradually the refinancing rate charged by the Bank of Latvia from 10 percent per month at the beginning of 1993 to 2.25 percent in October 1993.

*The text is based on a speech given by Einars Repse in Stockholm, Sweden, April 1993.*

the ruble. Thus, some of the states of the former USSR that introduced new currencies and adopted tight domestic financial policies escaped the monetary instability affecting some parts of the ruble area.

The recent demonetization implemented by Russia in July 1993 eliminated all pre-1993 notes of less than 10,000 rubles and separated the Russian currency from the other states of the ruble area. The move forced Azerbaijan, Georgia, and Moldova to declare their provisional currencies sole legal tender and sever their ties with the ruble area. Together with Turkmenistan, these three republics have announced that they will introduce new national currencies before the end of 1993. The remaining countries in the ruble area signed an agreement in September 1993 to create a unified currency area. But months after the demonetization, these countries are still without access to the currency that was once their legal tender, restricting their economies to the uncertain supply of old rubles and subjecting them to the risk of increased inflation that could result from inflows of old notes from other republics. Unless an agreement is reached soon with Russia, these states may also find it expedient to issue provisional currencies to cope with these challenges. ■

**Hernán Cortés-Douglas**
*a Chilean, is a Senior Economist in the IMF's Monetary and Exchange Affairs Department. He was educated at Catholic University of Chile and the University of Chicago.*

**Richard K. Abrams**
*a US citizen, is Deputy Division Chief in the IMF's Monetary and Exchange Affairs Department. He holds a PhD in Economics from the University of North Carolina.*

*Further information on technical aspects and a bibliography can be obtained from the authors' IMF Working Paper WP/93/49, "Introduction of a New National Currency: Policy, Institutional, and Technical Issues," June 1993.*

*New from the International Monetary Fund!*

# *Balance of Payments Manual*

Published in September 1993, this newly revised and updated fifth edition of the *Balance of Payments Manual* contains significantly expanded and restructured coverage of financial flows and stocks, and international transactions in services. Harmonization with the *System of National Accounts* and with other IMF statistical systems is increased. Changes in the treatment and classification of balance of payments and international investment position components reflect widespread alterations that have taken place in the nature and composition of international transactions since publication of the fourth edition (1977).

Like previous editions, the fifth edition serves as an international standard for the conceptual framework underlying balance of payments statistics. The *Manual* (i) provides standards for concepts, definitions, classifications, and conventions and (ii) facilitates the systematic national and international collection, organization, and comparability of balance of payments and international investment position statistics. The *Manual* also functions as a guide for member countries submitting regular balance of payments reports to the IMF.

$27.50. English. (paper) 1993. ISBN 1-55775-339-3 **Stock # BPM-EA** (*French and Spanish fifth edition is forthcoming*)

***To order, please write or call:***
**International Monetary Fund**
Publication Services, Box FD-304
700 19th Street, N.W.
Washington, D.C. 20431 U.S.A.

Telephone: (202) 623-7430
Telefax: (202) 623-7201
Cable Address: INTERFUND
*American Express, MasterCard, and VISA credit cards accepted.*

# Interest Rate Policies in Developing Countries

ABBAS MIRAKHOR AND DELANO VILLANUEVA

***DURING the past two decades, economists have emphasized the critical role interest rate policies play in the development process. But the experience of many developing countries suggests that these policies should be reassessed in the context of economic adjustment programs.***

Interest rate policies have been among the most contentious of the economic adjustment strategies pursued in the developing countries. While programs of financial liberalization aim at eliminating interest rate controls and achieving positive real interest rates on bank deposits and loans, there is no agreement on the best strategy for achieving these goals. Should interest rates be liberalized gradually or within a short period? What conditions are necessary before interest rates can be liberalized? Does the sequence of policies differ for high-inflation countries compared with low-inflation countries? How important are banking, regulatory, and supervisory policies?

While there is no set mechanism for attaining positive real interest rates, the experiences of many developing countries point to the importance of the initial state of the economy, in particular the financial position of the private sector and the quality of prudential regulations over the financial system.

## Policy strategies

Four policy strategies may be identified, depending on whether the initial macroeconomic environment is stable (SM) or unstable (UM), and whether bank supervision is adequate (AS) or inadequate (IS) (see table): (1) UM/IS strategy, in which macroeconomic instability interacts with weak bank supervision; (2) UM/AS strategy, in which the potential interaction between economic instability and moral hazard (the decision of banks to undertake risky lending in the presence of deposit insurance) is largely offset by effective bank supervision; (3) SM/IS strategy, in which the economy is stable but moral hazard in banks presents a potential problem because of inadequate supervision; and (4) SM/AS strategy, in which the economy is stable and the

| Policy sequencing | Initial country conditions | | | |
|---|---|---|---|---|
| | UM/IS | UM/AS | SM/IS | SM/AS |
| Step 1 | Stabilize economy and strengthen bank supervision while regulating interest rates | Stabilize economy and maintain supervision; begin gradual interest rate liberalization | Maintain economic stability and boost supervision; while enhancing supervision, temporarily regulate interest rates | Maintain economic stability and supervision; can liberalize interest rates simultaneously |
| Step 2 | Liberalize interest rates | Completely liberalize interest rates | Liberalize interest rates | |

Note: UM denotes unstable macroeconomy; SM denotes stable macroeconomy; IS denotes inadequate bank supervision; and AS denotes adequate bank supervision.

Effective bank supervision should be taken to cover the following policies, among others: adequate reserves against loan losses; adequate bank capitalization; limits on bank exposure to shareholders, personnel, and large borrowers; limits on foreign exchange exposure; a deposit insurance scheme with appropriate costs that reflect the riskiness of the individual bank's loan portfolio; adequate number and skills of bank examiners and supervisors; and the absence or minimization of political and other interference with the enforcement of bank supervisory and regulatory controls. (For details, see "Financial Liberalization in Developing Countries," by Michael Dooley and Donald Mathieson, *Finance & Development*, September 1987; and "Problems of Bank Supervision in LDCs," by Harry Snoek, *Finance & Development*, December 1989.)

banking system adequately supervised. The study on which this article is based (see box) examines the actual policy experiences in several developing countries corresponding to these strategies.

In theory, for all four situations, macroeconomic stabilization and stringent bank supervision must occur before complete interest rate liberalization. In only one situation—a stable economy and an effectively supervised banking system—is full and simultaneous interest rate liberalization likely to be successful. In the remaining three cases, regulated but flexibly managed interest rates aimed at attaining reasonably positive real levels should be the rule in anticipation of the full benefits from either economic stabilization, improved bank supervision, or both.

## What countries experienced

The experiences of Argentina, Chile, and Uruguay in the late 1970s and early 1980s have been well documented (see "Overview and Summary," by Vittorio Corbo and Jaime de Melo, *World Development*, August 1985). In all three countries, severe macroeconomic imbalances existed when interest rate reform and financial liberalization policies were implemented (strategy 1). Rates of growth of output, saving, and investment were all low; inflation rates were high; and external current account deficits were large in relation to national income. These countries completely and abruptly removed interest rate ceilings and credit controls, relaxed government supervision over a monopolistic banking structure, and provided virtually free deposit insurance, explicit or implicit. The interaction between loose banking supervision and an unstable macroeconomic environment intensified moral hazard in the banking systems. This strategy led to an immediate run-up in real interest rates on deposits and loans and increased uncertainty about the costs of borrowing if interest rates should become more volatile. In fact, banks raised lending interest rates to higher and riskier levels in the expectation that deposit insurance would cover any unusual losses—and it did.

Excessively high interest rates forced many low-risk firms to drop out of the market, causing the quality of bank loans to suffer. High-risk firms took up the slack and accepted high-interest loans. Riskier projects were associated with higher expected returns, which were expected to cover higher levels of interest payments. The combination of deposit insurance, inadequate supervision, and greater macroeconomic uncertainty allowed banks to take excessive risks by providing credits to firms with high default probabilities. Nonperforming loans rapidly developed, and many firms were forced into bankruptcy.

Much the same pattern of events—macroeconomic instability interacting with severe moral hazard—occurred in the Philippines and Turkey in the early 1980s. In both countries, interest rate liberalization was carried out in a period when the business sector's financial position was fragile. The further decline in profitability of the private sector and the banking system following financial liberalization was particularly sharp in these countries. An inadequate regulatory framework allowed insolvent banks to avoid bankruptcy by offering high rates to depositors, using new funds to carry nonperforming loans. On the other hand, firms that made losses increased their leverage even though the cost of borrowing had gone up.

Korea, Sri Lanka, and Indonesia suffered macroeconomic imbalances in varying degrees on the eve of financial liberalization (strategy 2). Financial reforms were undertaken in the context of overall economic liberalization and generally strong adjustment programs. In addition, the system of bank examination and supervision either remained intact or was considerably strengthened.

**Abbas Mirakhor**
*Iranian, previously with the Research Department, is Executive Director in the IMF's Executive Board (Afghanistan, Algeria, Ghana, Islamic Republic of Iran, Morocco, Pakistan, and Tunisia).*

**Delano Villanueva**
*from the Philippines, previously with the IMF's Research Department, is Assistant to the Director in the Middle Eastern Department. He holds a PhD from the University of Wisconsin.*


In these three countries, positive real interest rates were achieved and maintained primarily through credible macroeconomic policies that successfully reduced inflation to low levels. While stabilizing the economy and boosting effective bank supervision, these countries also made incremental adjustments in regulated nominal interest rates to maintain a positive real level. Positive real interest rates stimulated bank deposits, thereby increasing the amount of credit available to productive firms.

While Indonesia implemented measures to stabilize the economy and, under continuing bank supervision, gradually liberalized interest rates, problems arose in the second step in the policy sequence. Despite its failure to achieve macroeconomic stability, the government liberalized interest rates completely in 1983. Inflationary pressures and destabilizing capital flows, combined with expectations of devaluation, resulted in high and volatile domestic interest rates that often exceeded the rates of return to domestic fixed investments. The deterioration in the financial position of the business sector followed, and the volume of bad and doubtful debts grew.

Malaysia's story is entirely different (strategy 4). Long periods of economic stability and a strong tradition of banking supervision enabled the government in late 1981 to liberalize interest rates fully. The process took place in less than three years without the adverse consequence of an immediate increase in interest rates. Positive real levels were achieved consistent with both enhanced credit flows to the borrowing sector at stable interest rates and the banking system's generally sound loan portfolio.

## Coping with liberalization

The experiences of developing countries over the last two decades suggest that interest rate policies and financial reforms need to be reassessed in the context of economic adjustment programs. If the macroeconomic environment is unstable, adversely affecting the private sector's profitability, and bank supervision is ineffective, interest rate liberalization should take place gradually. Otherwise, a sudden removal of interest rate policies could disrupt long-standing financial contracts. At the same time that the government is pursuing strong macroeconomic policies to stabilize the economy and reinvigorate the private sector, it must strictly supervise the banking system to minimize moral hazard.

The importance of strong banking regulatory and supervisory policies needs to be underscored, not only because they ensure the viability and health of the banking industry—their traditional microeconomic role—but also because interest rate liberalization would be ineffectual without them. Banking systems can be strengthened in several ways. Besides the standard provisions for capital adequacy and reserves against loan losses, one way to reform implicit or explicit deposit insurance

schemes is to impose a bankruptcy penalty on bank activity or an actuarially fair insurance premium on bank liabilities, in direct proportion to the riskiness of the loan portfolio.

In terms of specific interest rate strategies, two types of situations may be considered: low inflation and unacceptably high inflation. A gradual program of interest rate liberalization that maintains positive real rates can proceed in the low-inflation countries, provided that banking supervision is strong and effectively enforced and that demand-management and other policies are appropriate to maintain economic stability. Within this group, countries with relatively long periods of price stability, achieved largely through sound and credible macroeconomic policies, are good candidates for full interest rate liberalization, subject to a strengthened system of prudential regulations over the banking system. Low-inflation countries that have already liberalized their interest rates will want to maintain economic stability and continually improve bank supervision.

In high-inflation countries, a strong and credible stabilization program and an equally strong set of prudential regulations are generally the best initial policy measures. Postponing the removal of interest rate regulations may be appropriate until the monetary situation has been stabilized and banking supervision strengthened. The empirical evidence suggests that successful countries have combined price stability with flexible, even if regulated, nominal interest rates. When interest rates are raised, the increases must be preannounced so that existing loan contracts can be renegotiated.

A high-inflation country that has already deregulated interest rates can strengthen the system of prudential controls over the banking sector and implement a strong and credible stabilization program that will stimulate the private sector. Failure to integrate and effectively implement such policies in programs of financial liberalization could lead to financial instability, which, in turn, could exacerbate macroeconomic instability. In the interim, if interest rates appear out of control (perhaps reflecting increasingly severe moral hazard problems unchecked by existing prudential regulations), it may be necessary to go back to regulating nominal interest rates and maintaining them at positive real levels. Regulations on lending rates can be safely removed only after confidence in the banking system is restored (here, an appropriate set of prudential regulations will play a key role), policies aimed at price stabilization bear fruit, and the financial position of the business sector improves. ■

---

*For a fuller and more technical discussion, see "Strategies for Financial Reform," by the authors in* IMF Staff Papers, *September 1990.*


*New from the International Monetary Fund!*

# 1993 Economic Reviews

*Economic Reviews* contain authoritative economic and financial analyses of member countries of the IMF. The reviews are based on regular IMF staff consultations with these countries and contain extensive tables and detailed charts. The following reviews have been published so far in 1993:

Armenia • Azerbaijan • Belarus • Estonia • Georgia • Kazakhstan • Latvia
Lithuania • Moldova • Russian Federation • Ukraine

Forthcoming titles include: •Kyrgyzstan • Tajikistan • Turkmenistan • Uzbekistan • Nepal

US$15.00 each (plus shipping charges)

Prepayment required.

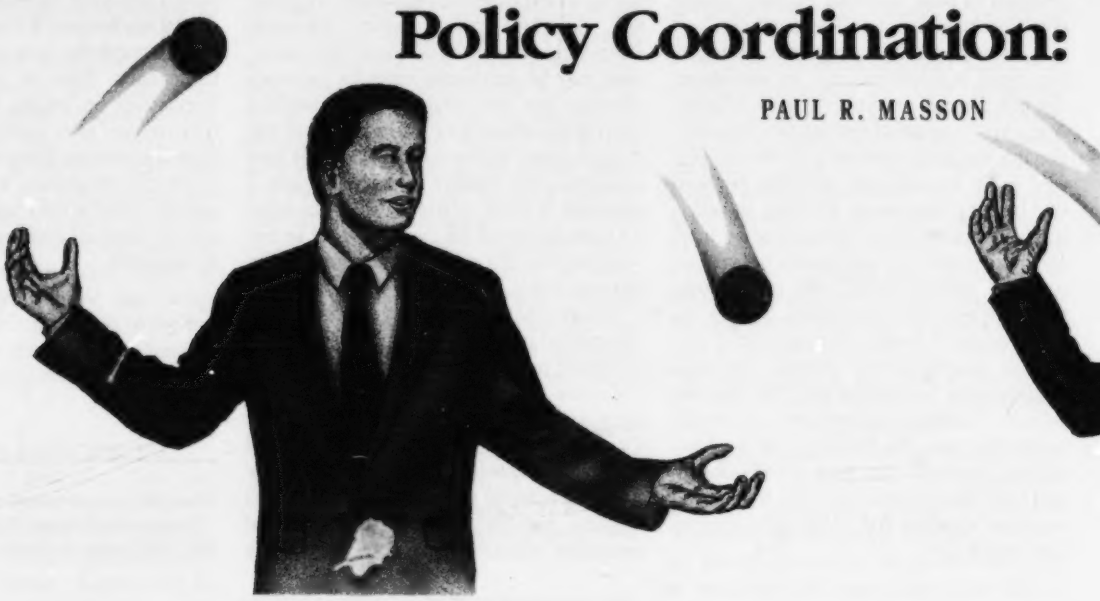
**The Complete Set (1993) is available for US$225.00** and includes delivery via Airspeed or First Class Mail at no additional charge.

***To order, please write or call:***
**International Monetary Fund**
Publication Services, Box FD-304
700 19th Street, N.W.
Washington, D.C. 20431 U.S.A.

Telephone: (202) 623-7430
Telefax: (202) 623-7201
Cable Address: INTERFUND
*American Express, MasterCard, and VISA credit cards accepted.*

# Policy Coordination:

PAUL R. MASSON



***IN AN increasingly interconnected world, the question of whether countries can improve their chances of successfully coping with the effects of economic uncertainty by coordinating policies is an important one. A recent IMF study suggests that, in the face of uncertainty, coordination may be more effective than independently conceived national policies.***

Why should governments coordinate their macroeconomic policies? At the most general level, the case for coordination rests on the fact that the policies of individual countries do affect neighboring economies. In fact, the effects of spillovers are dramatic enough that governments acting independently may succeed only in neutralizing one another's policies. Policy coordination, whether it takes the form of explicit, institutionalized rules for the international monetary system or ad hoc agreements—for instance, to prevent exchange rates or budget deficits from moving beyond target ranges—allows governments to better achieve crucial macroeconomic goals, both individual and collective.

The competitive devaluations of the 1930s provide an instructive example of what can happen in the absence of policy coordination. These devaluations caused soaring unemployment and a spectacular contraction of world trade as countries attempted to use their exchange rates to gain an unfair advantage in the face of a global depression. Another less serious failure to coordinate policies occurred in the aftermath of the 1979–80 oil price shock, when several countries used exchange rate appreciation to help lower their inflation rates, exacerbating inflation in other countries and leading to a severe contraction of output.

However, even well-thought-out, coordinated policies are subject to macroeconomic shocks, suggesting that it is not possible to know precisely what effects the policies will have. The 1978 G-7 (Group of Seven) Summit in Bonn, Germany represented one of the most important attempts at coordination among the major industrial countries, but the policy measures that were agreed to there are generally judged to have been overtaken by the second oil shock. The exchange rate parity changes decided at the Smithsonian in December 1971—the Smithsonian Agreement—did not save the Bretton Woods system of adjustable pegs, because the effect of these changes on trade flows had been greatly overestimated.

It can be seen from the above that uncertainty has both positive and negative effects on coordination. We therefore did a study that looked at the way such macroeconomic uncertainty affects both gains from policy coordination among industrial countries and efforts to reach and monitor multilateral agreements in order to form an overall view of the gains from coordination. We used econometric models to estimate the effects of different policy decisions on economies experiencing a variety of exogenous shocks to discover whether, in the face of uncertainty, coordination is better than independent policymaking. Our findings illustrate the benefits—and hazards—of policy coordination for the world economy.

## Does uncertainty affect gains?

Economists disagree about the precise definition of coordination. In the purest sense, a coordinated regime is one in which each government chooses its macroeconomic instruments in order to achieve a common set of goals, but it is unlikely that macroeconomic policies have ever been set in a manner that precisely satisfies this definition. A less demanding criterion for judging the extent of policy coordination might be that coordination occurs when policy choices take into account effects on other countries' welfare. Some economists have argued that what purport to be coordinated policies among the G-7 countries are really no different from the policies the national authorities of each country would pursue independently.

Yet substantive international economic policy coordination does take place; negotiations among governments generally do lead to out-

# How Is It Affected by Uncertainty?

comes that governments acting alone would not have reached. Political scientists have, for example, concluded that the agreement reached at the 1978 G-7 summit would have been impossible without coordination. Such agreements are negotiated with an eye to meeting mutually acceptable objectives, in contrast with policies that have clearly been chosen independently, without regard for the goals of other governments.

Government policies are, of course, planned and implemented in an environment of uncertainty about the prospects for national economies and, in particular, about the effects of policy changes. One view holds that this uncertainty makes formulating agreements much more difficult and may in fact eliminate any gains from coordination. This view has been expressed by former Chairman of the US Council of Economic Advisers Martin Feldstein, who observed in 1983:

> *"Economists armed with econometric models of the major countries of the world can, under certain circumstances, identify coordinated policies that, quite apart from balance-of-payments constraints, are better than uncoordinated country choices. But in practice, the overwhelming uncertainty about the quantitative behavior of individual economies and their interaction, the great difficulty of articulating policy rules in a changing environment . . . make such international fine tuning unworkable."*
>
> (*The Economist*, June 11, 1983)

Yet the view that uncertainty necessarily reduces the gains from policy coordination is much too simplistic. Though it is true that any policy, coordinated or not, may prove in retrospect to have been misguided because its effects were not correctly anticipated, under certain circumstances greater uncertainty may provide an additional incentive to coordinate policies. For example, even if each government has only one target (inflation) and is using only one instrument (monetary policy), uncertainty renders it unlikely that any country will hit its target exactly, since it is impossible to gauge the exact effects of its own or others' policies. Coordination can improve the effectiveness of monetary policy by reducing some of the uncertainty, in particular that part related to the actions of other governments.

The transmission effects of policies onto other countries are not precisely known, and joint decision making can help ensure that the effects of foreign policies on domestic output and inflation are not ignored. In contrast, governments acting independently would not be able to minimize these effects. Therefore, gains from policy coordination may actually increase with growth in uncertainty related to transmission multipliers (the effects of each country's actions on other countries).

The stock market crash of October 1987 provides a clear example of the positive effects of uncertainty on incentives to coordinate policies. Shifts in portfolio preferences leading to sharp declines in stock markets worldwide provoked concern about the stability of the financial systems in a number of countries. In general, during such a shift—in this case, out of equities or bonds into safer assets such as US Treasury bills—central banks may want to increase liquidity to avoid the bankruptcies among securities dealers that could threaten the financial system's stability. But the monetary authorities, fearing exchange rate depreciations, may be unwilling to lower interest rates. Following the 1987 crash, the central banks of the major industrialized countries circumvented the problem with a series of coordinated interest rate cuts, averting both a financial crisis and a downturn in activity.

This action is an interesting example of coordination that is partly ad hoc and partly institutionalized. Not only was it a response to a unique and unexpected event, but it was undertaken at a time when the G-7 coordination process had been strengthened by the Plaza Agreement and the Louvre Accord, so that an institutional framework was in place.

## What the study looked at

While the case for policy coordination seems strong in theory, even when the precise effects of the policies to be implemented are unknown, in practice the question of how large the policy gains will be remains unanswered. We formulated plausible, alternative econometric models to gauge the extent to which being "wrong" about the economy can affect gains from policy coordination among industrial countries. The models describe the functioning of the US economy and the remaining industrial countries as a group. Four alternative structures—representing prominent views within the economics profession—were used to specify the models, whose

parameters were estimated using data for the 1970s and 1980s. It should be stressed that the actual parameters are unknown and that estimates of their values have standard errors associated with them.

We used the estimated models to simulate situations involving values of shocks to the world economy consistent with historical experience, including a sudden increase in oil prices, a speculative attack on a currency, a shift in consumer preferences, and a decline in money demand. The predictions concerning the effects of these shocks differ with each model, as do the policy implications. The simulations assume that governments, not knowing which is the correct model, attach probability values to each. The models allowed us to use the different kinds of policy responses governments might resort to in coping with the various shocks to measure the gains or losses from coordination. We were then able to gauge the extent to which being "wrong" affects gains from policy coordination.

Differences in the models relate to the causes of inflation, the form of money demand, and the effect of shocks on potential output. For instance, in all the models except one, there is a vertical long-run Phillips curve, meaning that an attempt to raise output above its potential produces accelerating inflation. In one of the models, prices are purely flexible, so that monetary policy does not systematically affect output. In another of the models, shocks can cause output to diverge from an earlier trend. Welfare is assumed, for each country, to depend on output compared with potential and inflation compared with price stability. When considering joint welfare, the United States and other industrial countries are treated equally.

## Is coordination worthwhile?

Our findings showed that, in general, policy coordination is desirable, even in the presence of uncertainty, provided that the policymakers' view of how the economy works is not too wrong or is revised to take experience into account. However, coordination in the form of simple, nonactivist policies that are more cautious and do not respond as actively to macroeconomic developments may be better than attempts to agree on fully optimal policies.

***Coordination is the best policy.*** The simulation experiments indicate that coordinated policies are a significant improvement over policies conceived independently, despite the presence of model uncertainty. A good example is the stock market crash discussed above. However, policymakers wanting to gain the most from coordination must know which model is correct—or at least attribute a large probability weight to it.

***Being wrong can result in large welfare losses.*** The simulations show that, in some cases, being very wrong (selecting the incorrect model) results in huge welfare losses, because a policy chosen on the basis of the wrong model destabilizes the world economy. This finding can be illustrated with a simple example. One of the models postulates a long-term trade-off between output and inflation, so that policymakers can choose higher output if they are willing to incur higher inflation. In the other three models, since faster monetary growth produces higher inflation but does not stimulate long-term output, this trade-off does not exist. If policymakers believe in the first model, then both optimal coordinated and uncoordinated policies will try to exploit the trade-off, which will produce accelerating inflation if one of the other models is in fact the correct one. However, since this result holds true for uncoordinated as well as for coordinated policies, it is not an argument against coordination. Instead, it suggests that simple, nonactivist rules should be used.

***Simple, nonactivist rules may be best when uncertainty is great.*** Several of these rules were also evaluated: fixing the growth rate of the money supply and allowing the exchange rate to float freely, targeting nominal income, fixing the nominal exchange rate, fixing the real exchange rate, and a synthetic rule in which the money supply is adjusted as a decreasing function of output and producer prices and as an increasing function of interest rates. The rules performed well when policymakers were very wrong.

To return to the example of the previous paragraph, the fixed rules do not try to exploit the output-inflation trade-off and so are not destabilizing. But ever these simple rules would probably need to be coordinated to some degree, because otherwise countries would be tempted to stray outside the rules to gain competitive advantages over their trading partners. In addition, targeting a joint variable (like the exchange rate) requires mutual agreement. Such simple rules may provide a useful framework for coordination.

***Policymakers can learn from observation.*** Policymakers may be able to learn which model is correct by updating the probabilities applied to each. In other words, governments are assumed as before to set policies on the basis of their assessments of the likelihood that each model is correct, but they also update those assessments each period. Observing macroeconomic outcomes, and assumed to know the distribution of shocks affecting the world economy, they recalculate the probabilities that the four models could have generated those outcomes. Updating the probabilities in this fashion reduces uncertainty and makes it less likely that policy coordination will be destabilizing.

These simulations do not assume that policymakers eventually learn the true model in the sense of knowing precise parameter values; rather, policymakers endogenously learn the basic structure of the model, and parameter values have associated variances. Learning occurs at a rapid enough pace for gains to be realized by coordination relative to either uncoordinated optimal policies or simple nonactivist rules. In the perverse cases in which activist policies are destabilizing and welfare losses unbounded, it is hard to believe that policymakers would not modify their views about the functioning of the economy in light of manifestly incorrect predictions of the model they thought was correct. If they did so, then coordination would still dominate the other policies.

***"...in general, policy coordination is desirable...provided that the policymakers' view of how the economy works is not too wrong or is revised to take experience into account."***

A further interesting experiment consists in assuming that none of the four models is in fact correct. Instead, a completely atheoretical, time-series model is fitted to the data and used in the simulations to generate the data. As before, policymakers attempt to learn from observed outcomes which of the four models is correct, even though none of them really is. Once again, fixed, nonactivist rules generally come out quite well.

## Information sharing

It is sometimes argued that information sharing, not coordination, is the major source of gains from cooperation among the major industrial countries. Using a simple model, it is possible to show that information exchange alone may actually lower welfare. For instance, if the incentives for beggar-my-neighbor policies exist and have not been removed by an attempt at coordination, knowledge about other governments' actions may lead to increased efforts to use domestic policy in a way that can have further negative effects abroad. This possibility is not in itself an argument against information exchange; rather, it is an argument for recognizing the inherent limitations of forms of international cooperation that do not entail actual coordination of macroeconomic policies.

In practice, there may be good reasons why information exchange is accompanied by coordination. Information exchange typically results from the active consultation and negotiation that are part of the process of coordination among governments. One political scientist, Robert Keohane, has argued that only by entering into agreements to carry out specific policies can governments actually reduce uncertainty through the provision of information: "Uncertainty pervades world politics. International regimes reduce this uncertainty by providing information, but they can only do this insofar as governments commit themselves to known rules and procedures and maintain these commitments even under pressure to renege." Sharing information without any policy commitment may be valueless, because the temptation to mislead exists, making information about future policies less than credible.

## Obstacles to coordination

If the above gives a rosy view of the value of coordination, it is also important to take into account the obstacles uncertainty presents to achieving coordination.

***Verification.*** One potential obstacle to coordination is verifying that agreements are actually kept. A well-known example of such a problem is the "prisoner's dilemma," which posits two prisoners, each with the incentive to accuse the other. The best policy for both the prisoners is to remain silent, but, even if they agree to this tactic, it is impossible to enforce compliance. In this example, and also in real-world international economic policy coordination, the parties to agreements have incentives to renege. But while the temptation to cheat may be overwhelming if the agreement is considered in isolation, such behavior would of course lead other governments to refuse to cooperate in the future, so that cheating should be a rare event: governments, like individuals, care about their reputations.

Unfortunately, macroeconomic uncertainty makes it more difficult to observe cheating because policymakers can always claim that outcomes are the result of events beyond their control. This concern apparently resulted in a switch at the 1977 London summit to framing macroeconomic policy agreements in terms of policies, not outcomes. Such a procedure does not, however, really solve the problem because the choice of instrument settings will generally depend on forecasts of outcomes for macroeconomic variables. Germany, for example, may be urged to stimulate its economy (as it was in the late 1970s and in the mid-1980s) but may counter that the economy is about to pick up, making stimulus inappropriate.

***Misrepresentation.*** Such problems in verifying that governments are not misrepresenting their positions or the state of their economies may provide a rather strong argument for international organizations that provide independent inputs into the process of coordination. Because governments have asymmetric information, in the sense that they know more about their own economies than about foreign economies, there may be a suspicion that they are in some circumstances exploiting that information. A former G-7 deputy, Wendy Dobson, has argued forcefully that the G-7 Finance Ministers should draw on the services of a secretariat that would provide unbiased analysis and forecasts.

Just as there may be incentives to misrepresent private information, there may be strategic reasons for governments to misrepresent either their own preferences or their views about the effects of their policies in the face of model uncertainty. For instance, the United States may be urged to reduce its budget deficit, as it was in 1983 and 1984, but may respond that because its budget deficit is not the cause of high interest rates and the soaring dollar, reducing the deficit would not have the desired effects. US trading partners, however, are likely to consider these arguments a disingenuous attempt to shift the gains from any coordinated agreement in the United States' favor. The problems of bargaining over the exact outcome of a coordinated agreement when there is asymmetric information about beliefs or preferences are in fact so severe that a coordinated regime may be unattainable. Again, it may be important in achieving coordinated policy agreements for a respected, unbiased organization to confront various theories and evaluate the empirical evidence, narrowing the extent of differences in views.

## Final thoughts...

Uncertainty about the effects of policies, far from making coordination undesirable, is likely to provide an incentive to coordinate. It emerges from our simulations that the lack of precise knowledge about the world economy should not discourage attempts at coordination, as gains are likely to exceed losses. Although efforts at fashioning fully optimal policies (i.e., those that are best by some criterion) may lead to problems, coordination around simple policy rules can still be beneficial, even if policymakers are wrong about some aspects of the way the economy functions (e.g., the precise links between monetary policies and economic activity). As for the obstacles to achieving coordination, international organizations such as the World Bank and the IMF can play a role in making them less severe. ■

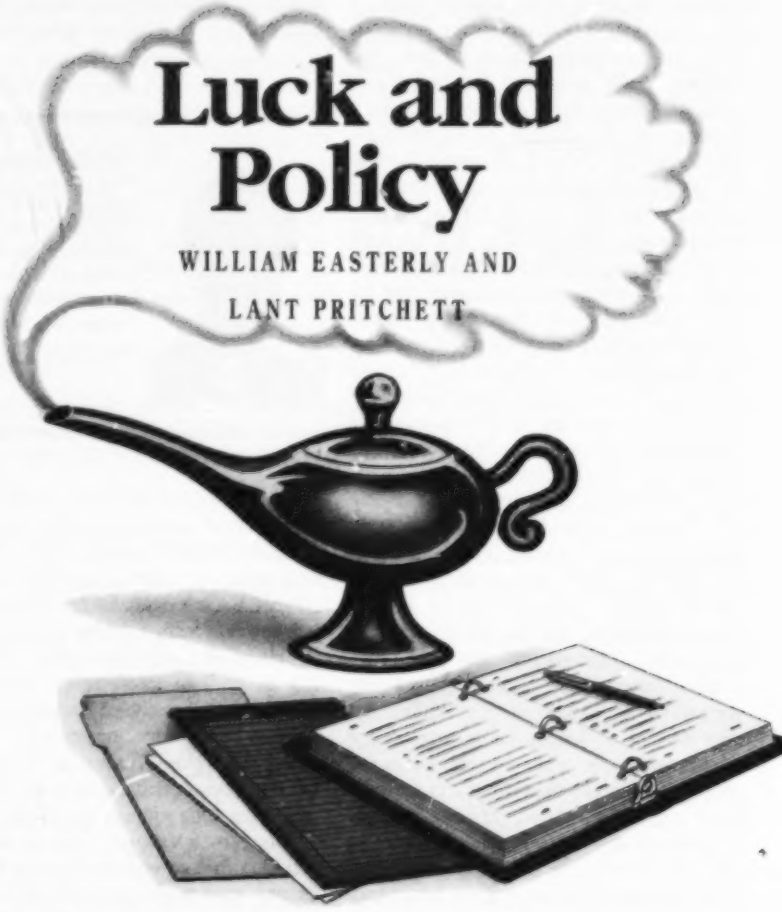
**Paul R. Masson**
*from Canada, is Assistant Director of the IMF's European I Department and Head of the Western European Division. He earned his PhD at the London School of Economics.*

*This article is based on a book by the author and Atish R. Ghosh,* Economic Cooperation in an Uncertain World (*Oxford: Basil Blackwell, 1993*). *The extensive literature on policy coordination is surveyed in "Scope and Limits of International Economic Cooperation and Policy Coordination," by Jocelyn Horne and Paul Masson* (IMF Staff Papers, *June 1988*).

# The Determinants of Economic Success:

# Luck and Policy

WILLIAM EASTERLY AND
LANT PRITCHETT



***A RECENT World Bank study shows that countries' economic growth rates are highly volatile due to the presence of "luck"—shocks such as shifts in terms of trade. But effective short- and long-term policies can help offset the effects of bad luck and create economic success stories.***

The economic "miracles" of the postwar era—Japan, Germany, and the Four Tigers of East Asia—have been justly celebrated. Their success has been the subject of much study by analysts eager not just to explain the rapid growth rates but to apply these explanations to other countries.

Many analysts have held to the implicit assumption that differences in economic growth rates among countries are relatively permanent, with the same countries performing well decade after decade. This assumption has led to generalized explanations that attribute the success of the postwar economic miracles to durable country characteristics: institutional arrangements such as the lifelong employment common in Japan's labor market, traditions such as government-business consultations in the Republic of Korea, and even cultural tendencies, such as the German penchant for quality.

But the realities of economic growth contradict the assumption that differences in growth rates remain stable over time; economic success (or failure) is typically short-lived. With some exceptions—notably the countries mentioned above—the same countries do not perform well over long periods. A country's performance may be outstanding one decade but a disappointment the next, and vice versa. There is a surprisingly large volatile element—transitory "booms" and "busts"—that has a significant effect on growth rates over periods of a decade or more. This volatile element, which can be described simply as "luck," includes internal shocks, such as droughts, as well as external shocks, such as sudden shifts in terms of trade.

But the presence of this volatile element does not imply that luck is the most important factor in economic success. A country may have the good luck to avoid negative shocks, but without good policy, it will turn in only a mediocre performance. Similarly, a combination of poor luck and poor policy can turn what should have been mere tremors into full-fledged shocks. For despite the presence of luck, established policies have an appreciable effect on economic growth rates and help to explain why some countries are able to sustain growth and others are not.

## Do growth differences persist?

Research indicates that very few economies see their success (or failure) persist from

decade to decade. An examination of the relationship between the per capita growth rates for the periods 1960–73 and 1974–88 for 115 countries illustrates this fact (see chart). If countries' growth rate differences were largely permanent, as many have assumed, the countries would lie along an upward sloping line, since those with high growth in the first period would also show high growth in the second. A correlation of growth rates across periods summarizes the volatility of country performance: the correlation is 0.2, indicating that, on average, only 20 percent of the growth differences between countries in 1960–73 persisted into 1974–88.

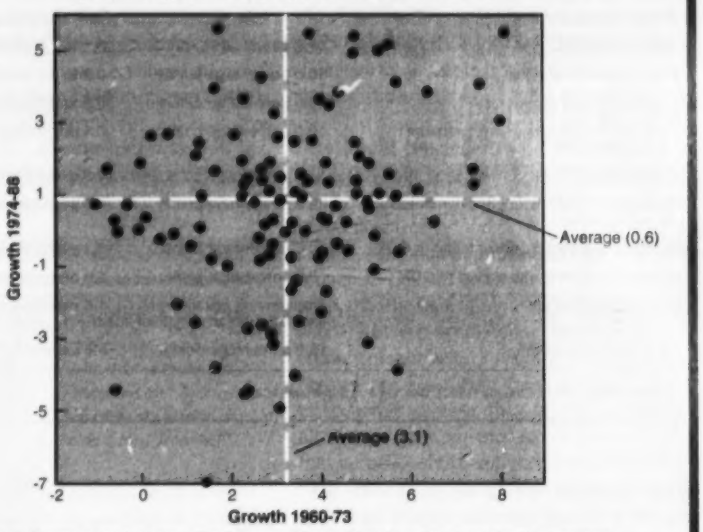
This low persistence is not an anomalous feature of the particular period or sample of countries we have chosen. Correlations of growth rates across periods are uniformly low for different historical periods, periods of time, and groups of countries. For instance, even across successive 30-year periods since 1870, the correlation for a group of 23 economies from Latin America and the Organisation for Economic Co-operation and Development is only about 0.1. And only four countries (Botswana, Korea, Singapore, and Taiwan Province of China) were in the top one tenth of the growth rates in both 1960–73 and 1974–88 (two other East Asian countries, Hong Kong and Japan, just missed the top rating in the first and second periods, respectively). Only one country (Chad) was in the bottom one tenth in both periods.

The widespread perception that relatively permanent cultural or institutional differences among countries are responsible for economic growth may be due primarily to the well-deserved attention the East Asian success stories have received. For without the East Asian countries in our sample, the already low correlation of growth rates (0.2) is reduced by half. Further, even some of the East Asian miracles performed relatively poorly before 1960: Korea, for example, had per capita growth of 0.1 percent from 1900 to 1950, as well as a lackluster decade in the 1950s.

The typical country saw its per capita growth rate change in absolute value (up or down) by 2.5 percent from the 1960s to the 1970s and by 3.5 percent from the 1970s to the 1980s. For instance, Mauritius had zero growth in the 1960s but achieved 7.3 percent in the 1970s. On the other hand, Jamaica, which grew at 4.5 percent in the 1960s, experienced negative growth of 1.5 percent in the 1970s. Nigeria went from a 2.6 percent growth in the 1970s to contraction—at 4.8 percent annually—in the 1980s.

The variation in growth rates is even larger for periods of less than a decade. In the typical developing country, the year-to-year change in the growth rate is 5 percentage points. Chile has been through a number of dramatic growth-contraction episodes, some lasting only a few years. Its per capita income grew at a respectable 2.5 percent annually between 1960 and 1972; it then fell by 6.3 percent each year from 1972 to 1976, rose 5.5 percent annually between 1976 and 1981, dropped almost 10 percent yearly from 1981 to 1983, and finally began to recover, growing 3.2 percent annually between 1983 and 1990.

**Growth does not persist**
(per worker growth rates per year, 1960-73 and 1974-88)




Source: R. Summers and A. Heston, "The Penn world Table (Mark 5): an Expanded Set of International Comparisons, 1950-88," *Quarterly Journal of Economics*, CVI:2, 1991.
Note: Growth rates are least-squares growth per worker for all 115 countries for periods shown.

## Unlucky forecasting

Economic forecasters, not realizing how quickly growth performance can change, have often made the mistake of extrapolating forward from a country's successes or failures. The first World Bank mission to Korea in the early 1960s described the government's development program as "ludicrously optimistic" because performance in the 1950s had been poor: "There can be no doubt that this development program [the GDP growth of 7.1 percent forecast for 1962–66] far exceeds the potential of the Korean economy. . . . It is inconceivable that exports will rise as much as projected." Korea's growth rate was 7.3 percent during the period in question.

In the early 1960s, a group of distinguished economists forecast a per capita growth rate for Sri Lanka that would exceed Taiwan's over the period 1962–76. Yet during those years, Sri Lanka's growth rate was 0.3 percent, Taiwan's 7.3 percent. According to the same predictions, Argentina and Colombia, countries that grew rapidly in the 1950s, would far outstrip Hong Kong and Singapore (with "its own potentially explosive problems [of rapid population growth] which threaten a mounting unemployment burden"). Between 1962 and 1976, Hong Kong grew twice as fast as Argentina, and Singapore more than twice as fast as Colombia.

The Bank's 1957 economic report was optimistic about the Philippines, describing the country's position in the Far East as "second only" to Japan's and its prospects for "sustained, long-term growth" as "good." Burma (now Myanmar) was put forward as an even more promising case; in 1958, the Bank commented on its "remarkable economic progress," observing that "Burma's long-run potential compares favorably with that of other countries in South East Asia." The Philippines and Burma have been among the few countries left out of the East Asian miracle.

With the exception of anticipated stars like the Philippines and Burma, however, economists were very pessimistic about the economic future of much of Asia because of the low growth rates prior to 1960. A development textbook in 1963 ranked this region last in development potential—behind Latin America, sub-Saharan Africa, and the Middle East.

Asia's prospects in the 1960s looked especially poor compared to Africa's. Inspired by rapid African growth in the 1950s and early 1960s, an economist predicted in 1967 that the continent's economic future could be "bright"

| An increase in: | of: | will change growth by: |
|---|---|---|
| Investment/GDP | 1.0 percentage point | 0.1 to 0.2 percentage point |
| Primary enrollment ratio | 10.0 percentage points | 0.2 to 0.3 percentage point |
| Secondary enrollment ratio | 10.0 percentage points | 0.2 to 0.3 percentage point |
| Black market exchange rate premium over official rate | 10.0 percentage points | -0.4 percentage point |
| Ratio of M2/GDP | 10.0 percentage points | 0.2 to 0.4 percentage point |
| Average producer input price compared to world prices | 23.0 percentage points | -1.0 percentage point |
| Ratio of government consumption to GDP | 10.0 percentage points | -1.2 percentage points |
| Ratio of equipment investment to GDP | 3.0 percentage points | 1.0 percentage point |
| Financial repression | from having positive real interest rates to negative | -1.5 percentage points |
| Export share to GDP | 10.0 percentage points | 0.6 percentage point |

Source: Barro (1991), Easterly (1993), DeLong and Summers (1992).

by the end of the century. He listed seven specific African countries that clearly had "the potential to reach or surpass" a 7 percent growth rate. All of the economies he listed had negative per capita growth in the following two decades.

Forecasting mistakes are more than amusing historical anecdotes. The recent optimism inspired by Latin America's rapid growth in the 1970s and early 1980s, for example, led many to underestimate the risk of a debt crisis. Such mistakes could be repeated today, given the euphoric expectations for East Asia and gloomy predictions for Africa and the states of the former USSR. Even some of the postwar economic miracles are already losing their luster; a recent article by Rudiger Dornbusch of MIT describes "the end of the German miracle." In fact, the primary lesson to be drawn from past economic growth is that "failures" can become "successes"—and vice versa—with surprising speed.

## Country traits and growth

If the significant variations in growth rates across countries are not the result of permanent country characteristics, what then is the cause? We asked if the source of this instability could lie in the fact that growth determinants such as policy environments, political climates, and educational enrollment rates are themselves rapidly changing. But in our sample, most political and policy indicators display much higher cross-decade correlations (0.6 to 0.9) than do per capita growth rates (0.1 to 0.2). The stability of these policy indicators over time suggests that they will offer little help in explaining the transitory fluctuations in economic growth rates, although they go some way toward explaining long-term differences.

Even if these various policy indicators are combined to produce an index of "good policy" (using a regression to determine the weights) the cross-decade correlation of this index is also very high—much higher than actual growth rates—ranging from 0.45 to 0.8, depending on the period and the variables included. Other country characteristics that are often invoked to explain economic performance ("culture," "work ethic," "quality of government," or "propensity to save") are likely to be even more stable than the policy indicators we do include, so that the persistence of predicted growth rates is likely to be even stronger if these more durable country characteristics are included.

In light of the stability of policy indicators and the instability of growth rates, even over periods as long as a decade, the policies and other country characteristics we have been able to measure cannot fully explain growth performance. Our findings suggest that luck and temporary policy mistakes—as opposed to permanent policy differences—are important factors in explaining sudden changes in growth.

## Policy, luck, and growth

Perhaps the most important type of luck influencing country performance is a shift in external terms of trade, such as a sudden increase or decrease in the world price of a country's main commodity export. Such changes can lower or raise growth by a surprising amount: a negative terms of trade shock averaging 1 percentage point of GDP annually over a decade (defined as the change in terms of trade times the initial trade share) lowers growth by 0.8 percentage points annually in that decade. Shocks of this type explain as much of relative growth performance in the 1980s as policies do. Moreover, measures of policies are themselves affected by external shocks: for example, a black market premium on foreign exchange (a commonly used indicator of macroeconomic policy) is itself affected by changes in terms of trade.

The GDP growth of many countries exhibits boom periods that account for a large part of overall economic growth. Very large booms—and busts—become evident in the 5-year periods showing the strongest and weakest economic performances of various countries between 1960 and 1990. The average growth rate across countries implies that per capita income grew 10 percent every five years during this period, but the strongest 5-year boom for each country created a 30 percent increase. Even considering these periods reflect the countries' top economic performances, the increase is dramatic and suggests that significant growth often takes place in a relatively short time.

Similarly, those countries with positive growth experienced a growth in income during the best 5-year period that is just less than half the income growth over the entire 30-year period. The same is true for busts: on average, the weakest 5-year period saw income fall 15 percent, in spite of the average upward trend.

But while shocks and other forms of luck may have an effect on growth rates over one year, five years, or a decade, policies strongly affect growth over longer periods. Development economists, particularly those associated with the Bank, have amassed evidence for years that outward-oriented, market-friendly policies have positive effects on long-term economic growth. Economists have recently undertaken another round of intensive research on the determinants of long-term growth, adding to this body of evidence. The data show that compared with slow-growth countries over a 30-year period, countries with an overall rapid growth rate have double the investment rates, half the inflation, one fifteenth the black market premium, twice the export share, four times the secondary enrollment, and double the primary enrollment.

Effective policies raise growth not only by creating an environment conducive to investment, but by increasing the amount of growth payoff to investment. Korea and Zambia provide a dramatic example. Between 1960 and 1989, the two countries had roughly the same rate of investment to GDP but very different trade and financial policies. Korea was outwardly oriented and did not have strongly negative real interest rates; Zambia was inwardly oriented and financially repressed, with very negative real interest rates. Korea's total GDP grew at 9 percent and Zambia's at just 1 percent.

These simple associations have also been confirmed in the econometric literature examining partial correlations between growth and policy variables. The partial correlations can be interpreted as supporting evidence for the argument that policies have a significant effect on growth rates (see table). For example, if a set of long-term policy reforms were implemented that increased equipment investment 3 percentage points of GDP, ended negative real interest rates, lowered the black market premium 20 percentage points, and raised primary and secondary enrollment 10 percentage points, per capita growth would rise a remarkable 3.8 percentage points. This gain translates into an additional increase in income of 45 percent in one decade and a more than doubling of income over two decades.

How do we reconcile the importance of good policy with the simultaneous importance of good luck? In reality, they pose no contradiction. Our findings suggest that while policy indicators are helpful in explaining some of the cross-country differences in growth rates over long periods, they are less successful in explaining changes in growth rates for shorter periods such as a decade. If drastic policy reform in some countries increased the variations across countries, then policy would explain a larger fraction of growth, even over shorter periods. The big policy reforms that lead to high growth are, however, unfortunately rare. For countries that continue to muddle along, luck is an important factor; for the few that dare significant reforms, policy overrides luck.

Moreover, policy itself can help countries cushion the impact of bad luck and take full advantage of good luck. How a country responds to shocks can be as important as the magnitude of the shocks themselves; in fact, the effects of shocks on growth that we found may reflect poor policy responses in a large number of countries. Nigeria and Indonesia provide an effective example. Both are low-income, oil-producing countries that relied heavily on oil revenues in the early 1980s. However, the two countries responded differently to the 1986 collapse in oil prices. Indonesia reacted rapidly, and, by avoiding large fiscal deficits and overvalued exchange rates, made the best of bad luck. Nigeria delayed its reaction allowing internal and external balance pressures to build to crisis stage, and its restrictive import policies and inadequate fiscal adjustment made a bad situation worse. As a result, Indonesia's economy continued to grow, and Nigeria's contracted.

Countries' macroeconomic policy stances are difficult to measure and compare. But as the example illustrates, macroeconomic policy decisions may explain some of the variation in growth rates and may play a part in their instability. Case studies suggest that macroeconomic policy mistakes can turn a successful country into an unsuccessful one in a hurry. For instance, the "Chilean economic miracle" celebrated in the late 1970s and early 1980s was undone by an appreciating real exchange rate (the nominal exchange rate was held at a fixed level in the face of continuing domestic inflation). Only subsequent stabilization and resolution of the external debt overhang allowed growth to resume.

**William Easterly**
*a US citizen, is a Senior Economist with the Bank's Transition and Macro-Adjustment Division. He holds a PhD from MIT.*

**Lant Pritchett**
*a US citizen, is a Senior Economist with the Bank's Poverty and Human Resources Division, and is currently working on the* World Development Report 1994. *He holds a PhD in Economics from MIT.*

Similarly, in the long run, countries can actually "make" their own luck. While the prices of current exports may be beyond a country's control, for instance, policies that respond to price fluctuations are not. In 1970, mineral ores (primarily copper) accounted for 88 percent of Chile's exports and 99 percent of Zambia's. Between 1970 and 1986, the nominal price of copper did not rise at all, yet Chile's total exports expanded almost fourfold, while the dollar value of Zambia's fell by half. The difference lay in the use of policy: Chile, responding to the market, reduced the share of copper to just half the country's total exports; in Zambia, copper's share remained at 92 percent.

A useful analogy in thinking about the functions of policy involves seat belts. The use of seat belts is not a major determinant of who gets injured in an automobile accident. The main predictor of injury in a car accident is *being* in an accident—a possibility that is often beyond the control of both passengers and drivers. Yet the probability of serious injury or fatality is much lower for seat belt users than for nonusers: the US Department of Transportation estimates that one third of all the country's highway fatalities in 1991 could have been avoided had seat belts been used. Few would conclude that because failure to use a seat belt does not explain 100 percent of all car fatalities, wearing seat belts is a matter of indifference.

Like seat belts in an accident, well-planned economic policies may be a country's best chance in the face of an unexpected economic shock. Just as it is difficult to argue against the efficacy of seat belts, it is difficult to argue that because policies are not the single determinant of economic success, they should be ignored altogether. All economies are subject to shocks that influence short- and medium-term growth rates, and in the interest of offsetting these shocks as much as possible, countries should not leave their policy seat belts unbuckled.

## Planning ahead

Countries enjoying a period of rapid growth cannot be complacent: most rapid growth episodes are short-lived. Good long-term sectoral and macroeconomic policies that lead to high educational enrollment rates, deep financial markets, increased equipment investment, stable and undistorted prices, and realistic interest rates are the only convincing foundation for future growth. Analysts should seek direct evidence that such policies are being followed and not simply assume on the basis of possibly temporary good performance that effective policies are the cause.

The evidence shows that economic success depends on such long-term policies as well as on short-term contingencies of luck and specific instances of macroeconomic management. While growth rates may take wide swings, countries with better-than-average policy fundamentals can expect to have better-than-average growth in the long run. With the aid of policy reforms, countries can overcome even bad luck and go on to promising futures. ■

*A discussion of the World Bank study appears in the October 1993 issue of* Journal of Monetary Economics *as "Good Policy or Good Luck? Country Growth Performance and Temporary Shocks," by William Easterly, Michael Kremer, Lant Pritchett, and Lawrence Summers.*

# National Perspective Studies in Africa: A Vision of a Better Future

PIERRE LANDELL-MILLS
*Senior Advisor, Vice President's Office for Environmentally Sustainable Development, The World Bank*

***AFTER three decades without significant improvements in national incomes or welfare—and at a time when citizens are being asked to make major sacrifices in the name of economic reform—Africans are increasingly aware of the need to articulate a new, well-defined vision for the future.***

During the 1980s, African countries were beset by a series of short-term financial crises that focused governments' attention on solving urgent and immediate problems. The implementation of economic adjustment programs and the need to achieve short-term financial stability took precedence over all else. By default, ambitious development objectives were mostly abandoned.

Toward the end of the 1980s, however, leaders began to recognize that excessive preoccupation with short-term issues had led to the neglect of measures essential for sustainable long-term improvements in national welfare. Consensus began to emerge within Africa on the need to take stock and plan for a better future. In April 1989, in Addis Ababa, Ethiopia, African ministers of planning resolved to revitalize long-term development planning in the region. Eight months later, the World Bank published a report entitled *Sub-Saharan Africa: From Crisis to Sustainable Growth: Long-Term Perspective Study*, which sketched out a strategy for economic recovery. The key elements were:

- greater attention to human resources development;
- substantially increased levels of savings and investment;
- a much more supportive environment for private sector development;
- continued macroeconomic reforms, liberalizing prices, greater reliance on markets, and the achievement of sustainable public finance goals; and
- improved public management and greater efforts to build capacity.

In July 1990, the Maastricht Ministerial Conference of African and International Donor Governments adopted a resolution recommending the preparation of national long-term perspective studies (NLTPS). At that time, 15 countries declared their intention to prepare these plans, which are now in varying degrees of preparation—Côte d'Ivoire, Gabon, and Mauritius are the most advanced, while eight others are just beginning. Progress has generally been slow, because the task is complex and the process is hard to manage. The UN Development Programme has earmarked $9.5 million for a 5-year regional NLTPS support project, with a team of experts already in place in Abidjan, Côte d'Ivoire.

## What NLTPS would do

The call for NLTPS is not to be interpreted as calling for a return to the discredited "5-year plans" typical of command economies. Rather, as currently conceived, an NLTPS is a process for launching a national debate on long-term development options—the objective being to reach a broad-based consensus on a set of feasible national development goals, policies, and strategies.

For an NLTPS to contribute usefully to mobilizing national development efforts, it must be based on careful analysis of a country's natural and human resources and developed within each country's cultural, regional, and international context. Plausible scenarios for long-term, sustainable economic and social development must be developed, providing a basis for building a national consensus. At a minimum, each NLTPS should review past successes and failures in achieving national development goals, identify the agents of change, evaluate the current socio-economic-resource situation. It should also elaborate a prospective vision based on projections of growth by source and by the related demographic, educational, health, employment, and environmental trends.

It is crucial that the study be "home grown" and participatory, prepared as far as possible by citizens drawn from different segments of the society, including politicians, academics, business persons, nongovernmental organization leaders, youth, women's leaders, trade unionists, and government officials. Indeed, it is the very process of analyzing prospects and defining options that increases national understanding of the choices that must be made, thereby helping a consensus on development priorities to emerge.

The development strategies derived from the NLTPS process should incorporate current sectoral development initiatives such as national environmental action plans, population action plans, and master plans for agricultural research (elaborated in the context of the Special Program for African Agricultural Research). The NLTPS should also clarify the roles of the state and private sectors, along with reconciling national and regional plans for cooperation or integration (e.g., the African Capacity Building Initiative, the Municipal Urban Development Program, the Regional Orientation Committee for Water and Sanitation, the African Charter for Popular Participation in Development, and

the Sub-Saharan African Transport Plan).

While tailoring the exercise to individual circumstances, national development strategies should foster dynamic private entrepreneurship, effective and self-reliant grassroot communities, and efficient government services so that all of the social partners within the country may work toward shared national development goals. In so doing, the NLTPS would also provide the international donor community with a well-defined framework for enhanced financial and technical assistance.

By promoting national dialogue based on a well-grounded analysis of long-term options, the NLTPS will encourage debate on development priorities. But to be effective, the effort must go beyond laying out a long-term strategy. The NLTPS should link the strategy to the current policies of the government and define a viable macroeconomic framework for development actions in the period immediately ahead. By fully taking account of institutional capacity, availability of resources, and ongoing sectoral development activities, an NLTPS could help a government articulate multiyear national development programs that include public sector investment programs and macroeconomic and sectoral policies consonant with current external trade and financial constraints.

## Key elements

An NLTPS would normally give attention to seven key elements:

***The macroeconomic framework.*** In the case of most African economies, complex model building will generally not be needed and, in any event, may not be feasible because of inadequate data. Nevertheless, it is useful to elaborate one or more broad scenarios that set out the magnitude and composition of the main macroeconomic aggregates: production, investment, and savings.

***Demographic and spatial dimensions.*** Of crucial significance for almost every aspect of long-term analysis are projections of demographic trends and their spatial distribution. It is vital not only to establish credible targets for the growth of the population but also to estimate population movements. These trends will depend on the expected level and nature of urbanization and will influence the distribution of social and physical infrastructure requirements.

***Human resource development.*** By its nature, human resource development is a long-term endeavor, and the NLTPS brings out the need to invest more heavily in this area. But at the same time, crucial issues of strategy arise relating to questions of efficiency and equity. If the target level of 8 percent of GDP devoted to human resource development proposed [in *From Crisis to Sustainable Growth*] is to be achieved, hard issues of priorities will need to be faced in deciding on inter- and intrasectoral allocation of public expenditure.

***Sustainability issues.*** The long-term sustainability of any development strategy will depend on whether it adequately addresses the nexus of issues that relate explosive population growth to weak agricultural productivity and environmental degradation. This is why a country's national environmental action plan should be seen as an integral part of any NLTPS. At the same time, consistency must be sought between demographic projections, population action plans, and proposed national resource development strategies. Particular attention should be paid to expected trends in agricultural productivity related to programs for agricultural research and national extension.

*"...an NLTPS is a process for launching a national debate on long-term development options..."*

***An enabling environment.*** Economic growth will depend on a government's ability to create an enabling environment for private businesses. Such an environment has two distinct components: efficient infrastructure, and supportive policies and good governance. An NLTPS will therefore need to set out an infrastructure development strategy and credible private sector development policies. Neither will succeed unless the country can put in place an efficient service-oriented public administration, adopt measures to ensure accountability and transparency in its public agencies, and institute the rule of law.

***Social policies.*** Development implies far more than economic growth. The progressive reduction of structural poverty will not occur without development strategies that explicitly address this objective. Targeted assistance for vulnerable groups is needed, especially to ensure food security and affordable social services. Gender issues will need explicit attention to ensure not simply equity, but also the empowerment of women to enable them to play their full role in development.

***Institutional development.*** Africa's poor economic performance can be explained in large measure by its weak capacity to implement development. So far, few countries have had explicit and coherent strategies to strengthen public and private institutions. No NLTPS will be complete if it neglects this dimension. Institutional development is not simply a matter of training and bringing in well-managed technical assistance. It requires clarifying the roles and inter-relationships of the key state institutions, as well as formulating long-term measures to build sustainable capacity.

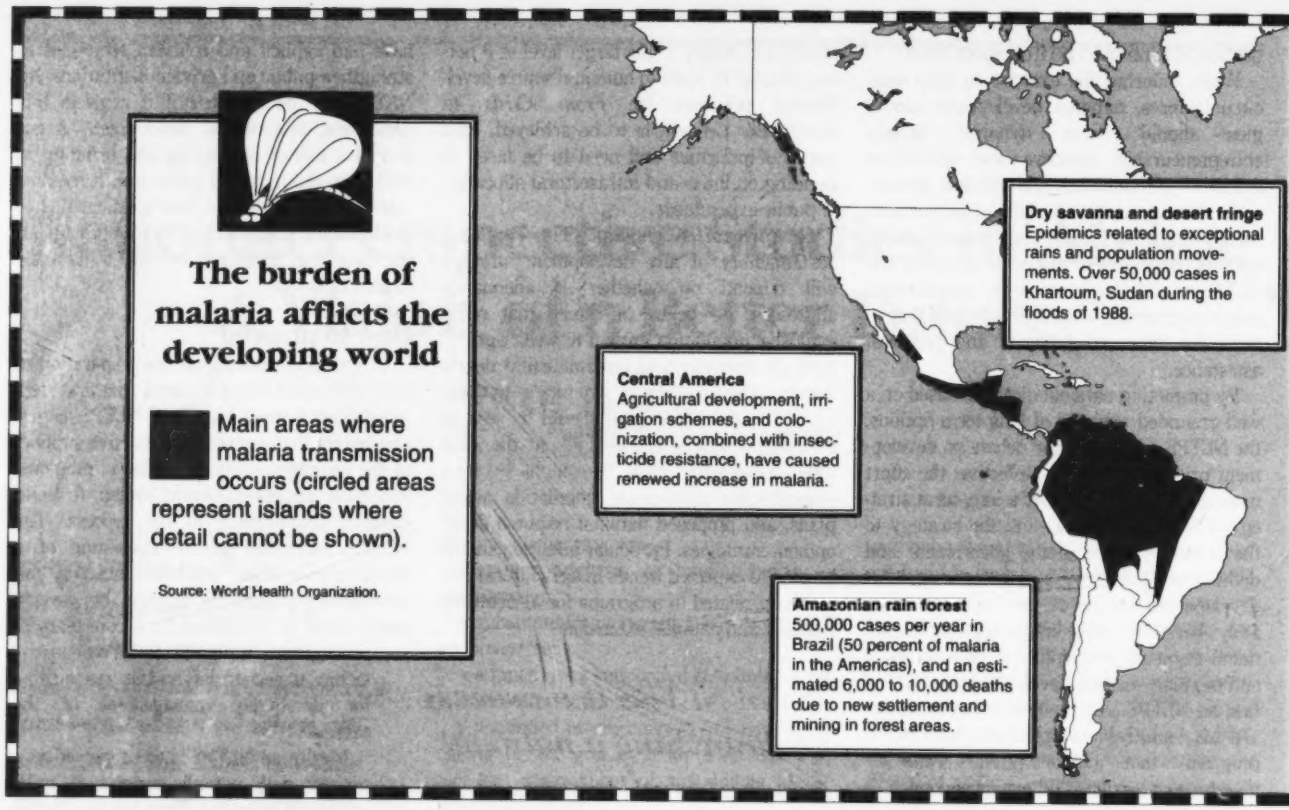
## How to proceed

Countries embarking on the preparation of an NLTPS have found it useful, as a first step, to establish a small, high-level NLTPS leadership group that can obtain the active support of the country's political, business, religious, and other nongovernmental leaders to build national commitment to the process. The NLTPS leadership group—consisting of a small number of key ministers, officials, and prominent personalities outside the government—need to be backed by a core team of professional staff, which serves as the technical secretariat and is responsible for day-to-day management of the exercise.

Ideally, an NLTPS is to be viewed as a process with periodic reports as milestones. Within the first phase, lasting from 18 to 24 months, the government and the private sector should be able to define the strategic agenda that, at a minimum, contains an evaluation of the national issues, an assessment of the external variables affecting the country, and a specific action plan covering five to ten years. Subsequent phases would examine specific issues in great detail and monitor progress in the implementation of the strategic agenda.

If successfully conducted, the NLTPS process should increase awareness of the nature of the development challenge. Dissemination of the findings relating to the key development issues and options facing the nation—demographic trends, human resource development, environmental trends, management capacity, infrastructure needs, social conditions, and political factors—will entail (1) an open debate leading to their validation; and (2) definition of a strategic agenda and action plan that reflect the chosen policies and priorities.

The NLTPS process will assist those who are responsible for implementing the difficult economic, social, and political changes during the coming decade to generate broad-based support from key constituencies in their countries. This, in turn, will provide donor countries with greater confidence that the development programs they support will yield sustainable results. ■


The burden of malaria afflicts the developing world
Main areas where malaria transmission occurs (circled areas represent islands where detail cannot be shown).
Source: World Health Organization.
Dry savanna and desert fringe
Epidemics related to exceptional rains and population movements. Over 50,000 cases in Khartoum, Sudan during the floods of 1988.
Central America
Agricultural development, irrigation schemes, and colonization, combined with insecticide resistance, have caused renewed increase in malaria.
Amazonian rain forest
500,000 cases per year in Brazil (50 percent of malaria in the Americas), and an estimated 6,000 to 10,000 deaths due to new settlement and mining in forest areas.

# Organizing Tropical Disease Control

BERNHARD H. LIESE AND PARAMJIT S. SACHDEVA

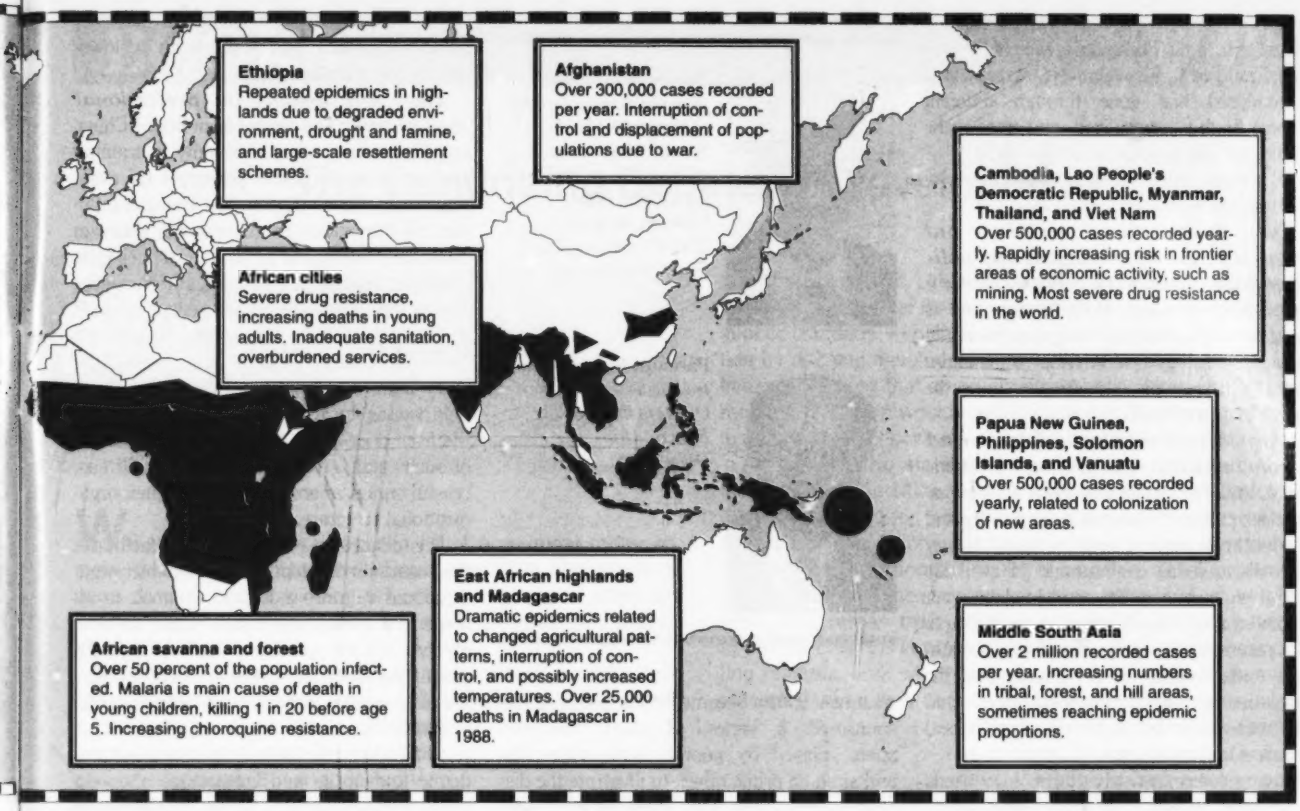
***IF GOVERNMENTS are to control the spread of tropical diseases in the developing world, they need to understand what measures are likely to work and under what circumstances.***

Tropical diseases kill almost two million people a year. Another half a billion people—one person in ten—suffer the disabling effects of these diseases, which cause severe anemia, blindness, brain damage, gross deformities and other maladies (see box). Nearly all of these victims live in the developing world, particularly Africa, and are among the poorest of the world's people, subsisting in rural farming communities or urban squatter settlements. Apart from causing tremendous pain and suffering, these tropical scourges have insidious effects on society: they impede national development, make fertile land inhospitable, and exact a huge cost in treatment.

Relatively few governments support major efforts to control tropical disease. The means, primarily drugs and insecticides, of treating and controlling most of these diseases do exist. Yet despite a major expansion of primary health care in the 1980s, the burden of tropical diseases is increasing, and the prospects of controlling the major diseases—malaria and schistosomiasis—are worsening. Why then is so little attention paid to tropical disease control? Along with economic and political factors, ideological differences over how to organize disease control have impeded efforts to use the available technology to reverse or even halt the spread of diseases.

The main area of controversy over the past ten years revolves around the question of whether programs should be "vertically" organized or "horizontally" integrated. In somewhat oversimplified terms, vertical is hierarchical, technology based, and "categorical," that is, focused on specific diseases. In contrast, horizontal integration is intertwined with primary care, community based, and close to the people. Many have blamed the failure to control tropical diseases on the fact that disease control programs have traditionally been vertically organized and were seen as neither sustainable nor organizationally efficient. Underlying this belief is a bureaucratic concern about vertical fragmentation, which in its most dramatic form might mean the establishment of parallel health delivery systems for tropical diseases. But there is little evidence that this has happened on a large scale; in fact, just the opposite has happened—even decentralized, integrated health service systems have neglected to control tropical disease.

If governments are to overcome the tropical diseases that cause so much misery in developing countries, they have to overcome "bureaucratic squabbling" and understand


Ethiopia
Repeated epidemics in highlands due to degraded environment, drought and famine, and large-scale resettlement schemes.
Afghanistan
Over 300,000 cases recorded per year. Interruption of control and displacement of populations due to war.
Cambodia, Lao People's Democratic Republic, Myanmar, Thailand, and Viet Nam
Over 500,000 cases recorded yearly. Rapidly increasing risk in frontier areas of economic activity, such as mining. Most severe drug resistance in the world.
African cities
Severe drug resistance, increasing deaths in young adults. Inadequate sanitation, overburdened services.
Papua New Guinea, Philippines, Solomon Islands, and Vanuatu
Over 500,000 cases recorded yearly, related to colonization of new areas.
East African highlands and Madagascar
Dramatic epidemics related to changed agricultural patterns, interruption of control, and possibly increased temperatures. Over 25,000 deaths in Madagascar in 1988.
African savanna and forest
Over 50 percent of the population infected. Malaria is main cause of death in young children, killing 1 in 20 before age 5. Increasing chloroquine resistance.
Middle South Asia
Over 2 million recorded cases per year. Increasing numbers in tribal, forest, and hill areas, sometimes reaching epidemic proportions.

## Nature of tropical diseases

Malaria is by far the most important tropical disease. The roughly 110 million clinical cases that occur annually result in 1-2 million deaths, especially among children in endemic areas. It is widely spread throughout the tropics but also occurs in many temperate regions (see map). Epidemics are frequent in rural areas experiencing intense economic development. Treatment and control have become more difficult with the spread of drug-resistant strains of malaria and insecticide-resistant strains of mosquito vectors.

Schistosomiasis, the second most prevalent tropical disease, is widespread, especially in sub-Saharan Africa, Brazil, China, Egypt, and the Philippines. Although seldom fatal, it causes severe debilitating illness in millions of people. It is often associated with water development projects, such as dams and irrigation schemes, where snails, which are the intermediate hosts, breed in water where people wash and fish.

Other diseases include the mutilating and debilitating leprosy, to which an intense social stigma is attached; African sleeping sickness, transmitted by the tsetse fly, and its equivalent, the South American chagas disease, both fatal if untreated; dengue and dengue hemorrhagic fever, transmitted by a virus and occurring in epidemics in Asia and Latin America; and lymphatic filariasis, which affects millions of people and leads to chronic disability or onchocerciasis, also known as "river blindness."

| Tropical disease | Countries affected | Population at risk | Population infected |
|---|---|---|---|
| | | (millions) | |
| Malaria | 103 | 2,100 | 267.0 |
| Leishmaniasis | 80 | 350 | 12.0[1] |
| African trypanosomiasis | 36 | 50 | .1[1] |
| Chagas disease | 21 | 90 | 17.0[1] |
| Schistosomiasis | 74 | 600 | 200.0 |
| Lymphatic filariasis | 76 | 905 | 78.6 |
| Onchocerciasis | 34 | 90 | 17.6 |
| Leprosy | 121 | 1,600 | 100.0 |

Source: World Health Organization.
[1] Diseases with an important animal reservoir.

the institutional factors that are essential to implement control efforts effectively. To assist governments, a study, funded in part by the World Bank, looked into successful, effective, and sustainable health organizations that have succeeded in significantly reducing disease transmission and morbidity. The study covered tropical disease programs in Brazil, China, Egypt, the Philippines, and Zimbabwe, with a view to examining their common technological, organizational, and managerial features. Surprisingly, the study found that there is no "best" organizational structure for effective disease control. Rather, what matters is putting in place key institutional features.

### What makes programs work

Although the issue of organizational structure has dominated the debate so far, the study found that structural differences—vertical or horizontal integration—do not by themselves fundamentally affect program performance. For example, China's schistosomiasis control program (vertical and categorical) comprises many specialized institutions. Brazil's main institution for controlling endemic diseases—a semiautonomous, categorical entity—is a hybrid (centralized but horizontally integrated at the regional levels), while Egypt's schistosomiasis control program is administratively fully integrated into the regional health services (horizontally

integrated). In the Philippines, each of the programs studied (schistosomiasis, malaria, and tuberculosis) has gone through different phases (highly centralized and then integrated into the regional health services).

In general, effective tropical disease programs share several characteristics:

***They decentralize operations but retain a single technological and policymaking authority, even within diverse structures.*** How the program is managed is what matters. Programs generally formulate strategy and develop technologies centrally but rely on field offices to tailor the program to local needs.

***They are technology driven and action oriented.*** The programs in China, Egypt, and the Philippines have an international reputation for scientific competence and a sound knowledge of both the epidemiology of the diseases they confront and the available control technologies. These technologies are adapted for field applications through practical operational research, combining a thorough understanding of the disease and the population with good judgement about what can reasonably be achieved, given local resources and constraints.

Having determined what technology needs to be used, effective programs gear every detail of organization and management to applying that technology in the field. Brazil's main institution for controlling endemic diseases, the former Superintendency for Public Health Campaigns (SUCAM), now reorganized as the Brazilian National Health Foundation (FUNASA), has a vigorous action mentality that drives its programs year after year. So powerful is the action orientation of the field staff that even three years after a major organizational upheaval, with many leadership changes at the center, the FUNASA field staff, with their commitment to "get things done," still remain the backbone of disease control operations in Brazil. Field operations (e.g., malaria control) include detailed mapping of the households and locations where controls will be carried out, intradomiciliary spraying with insecticides, distribution of insecticide-treated bed nets or curtains, collection of blood slides through a network of volunteers, and most important, treatment of sick people.

Egypt's approach to schistosomiasis control is similar, with efforts directed at waterways and snails, large-scale drug treatment, and health education. Realizing that contact with water is unavoidable, the Egyptian program has not tried to tell farmers to avoid water in order to reduce the possibility of schistosomiasis infection. Instead, the farmers are urged not to pollute the water and to go for treatment if they become ill. The program has sponsored a series of short television spots—played by popular local comedians and aired on prime time—to illustrate the disease transmission cycle, stressing how inexpensive it is to obtain tests and free drugs.

**Bernhard H. Liese**
*from Germany, is Director of the Bank's Health Services Department. Along with a medical degree from Bonn, Germany, he holds a Master's degree in Public Health from Harvard.*

**Paramjit S. Sachdeva**
*from India, is Projects Officer in the Bank's Eastern Africa Department.*

***They view extension activities pragmatically.*** Field systems for health education and surveillance are built around a realistic view of what is feasible at the periphery and how difficult it is to change people's attitudes and behavior. Community involvement is therefore limited to highly focused, task-related interactions with households, and few attempts are made to involve large community groups in routine operations. In fact, all organizations deviated from the common ideology-driven notion of community-based activity—the household rather than the individual or the community is the major focus of information.

Pest-control measures that normally focus on houses facilitate the identification of households. An example from Brazil shows how organizations have further refined their approaches after identifying households as the main point of intervention. Malaria control programs in Amazonia have traditionally moved the rural health worker (*guardas*) into a different area daily to spray insecticides, collect blood films, and educate families. This technique has since been changed to a "microzoning" approach, in which each *guarda* is responsible for a specific cluster of houses. The *guarda* is expected to move continuously from house to house and to spend nights in the homes of the families. Not surprisingly, the second approach has resulted in a lower prevalence of malaria.

***They rely heavily on professional staff groups.*** The programs in Brazil, China, and Egypt have invested heavily in training and grooming technical personnel for eventual prestigious staff positions. The staff influence all operations, from designing program strategies, developing technological packages, preparing operational manuals, and backstoping the technical supervision to ensuring quality control of field operations through an elaborate control system (e.g., rechecking every tenth blood film and identifying every field worker by using a "sign-off system" on the front door of the houses visited). The use of such "staff groups" is similar for all successful organizations, regardless of their organizational structure.

The reliance on staff groups also facilitates the conscious development of a distinct organizational culture—a feature common to all the organizations researched. This "culture" involves the recognition of staff through the use of nonmonetary rewards such as "outstanding worker awards," "seniority awards," and training certificates. It includes a high regard for experience-based rather than academic knowledge and encourages a strong sense of public service and an equally strong commitment to personal and professional development.

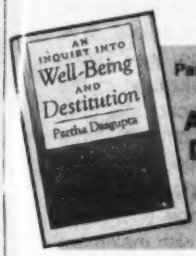
## In sum...

As the threat from many tropical diseases increases, so too does the cost of inaction. The recent 1992 ministerial meeting on malaria urging affected countries and the international community to intensify disease control is an encouraging milestone. The key lesson of the study is that ideology-based approaches to the organization of disease control should be rejected. For disease control programs to be effective, attention must be paid to both the big picture (policies, strategies, and organization) and the small pieces (systems, procedures, and processes). A better understanding of the institutional features necessary for effective control programs will speed the needed action in the field. ■

*For a comprehensive analysis, see Bernhard H. Liese, Paramjit S. Sachdeva, and D. Glynn Cochrane, "Organizing and Managing Tropical Disease Control Programs—Lessons of Success," World Bank Technical Paper No. 159. Detailed country case studies are also available.*

# BOOKS

## The Continuing Debate on Development




Partha Dasgupta

**An Inquiry into Well-Being and Destitution**

Oxford University Press, New York, NY, USA, 1993, 680 pp., $45.

While there is a surprising degree of agreement today on many issues concerning development, there are also areas of deep division and continuing uncertainty. This book offers an excellent opportunity to confirm the areas of agreement and to assess the controversies.

*Inquiry*, which offers an unusual blend of theory, practice, and policy guidance, arrives at many of the same conclusions as the World Bank's recent *World Development Reports* on poverty, environment, and development. But it goes further. In addition to offering many more theoretical underpinnings, the book works with a comprehensive definition of development and looks at the development process from several levels—individual, household, community, and state. The main thrust is that economic growth survives as a critical ingredient and that it pays to look at the other key dimensions.

**What is development?** One of the key contributions of the book is its comprehensive and policy-oriented definition of development. In addition to incomes, development incorporates health, education, and freedom, proxied in the book by life expectancy, infant mortality, adult literacy, and civil and political liberties. Proper valuation of the environment is a theme that runs through the discussion, and income and asset distribution figure prominently.

As usual, readers will find much to both agree and disagree within this characterization of development. The use of indexes of well-being and the inclusion of civil and political liberties are controversial points. Readers might well ask if the indexes of well-being could have been linked to policies in the period that is being studied (pre-1980). In that period, it would seem that different approaches produced equally good indexes: China and Sri Lanka, on the one side, emphasized the provision of social services, while the Republic of Korea and Thailand, on the other, pursued broad-based growth. All had good growth performance.

While there are good reasons to include freedom in the definition of development, some readers might not find convincing the evidence that greater freedom goes with more rapid development in poor countries. In part, Dasgupta has circumvented this question by defining development as inclusive of liberties. And even findings showing that some countries have done well with only moderate freedom would have no policy implications, because it is impossible to choose development-minded authoritarians.

**Actions by the state and market.** *Inquiry* makes the point that the language of traditional economics does not speak to the concerns of the poor, who make up a large part of the developing world's populations. Dasgupta almost makes a case for a separate line of economic inquiry or branch of development economics, because developing countries have large market failures. But rather than offering substitutes for markets, his approach calls for improving existing markets. This means letting markets work when they can and having the state step in efficiently when they cannot. In considering individuals, households, local communities, and the state as players in the development process, the book makes a major contribution to developmental thinking.

*"His ideas in themselves are provocative and will spur many people to do some thinking and talking."*

This treatment has an important implication for action, notably in "participatory processes." The key is to understand how things actually work before changing them and then involve those with the most information in those changes. China's experience with reform is most instructive in this regard. It involves building institutions at the local level, watching them work, and replicating them to replace the old institutions.

Such an approach applies to social development and, interestingly, to the classic cases of externalities such as pollution. The book is right in pointing out the value of seeking information on environmental problems from local communities. Yet the state's role cannot be minimized. The experiences of many large countries suggest that local governments themselves may not adequately take into account the environmental consequences of a project. The solution is to ensure a two-way flow of information and participation between the local and central levels, not to abdicate state intervention entirely to the localities.

Dasgupta's agenda for action is a distillation of 40 years of development experience. His ideas in themselves are provocative and will spur many people to do some thinking and talking. And for that reason alone, Dasgupta deserves thanks.

*Vinod Thomas*

Jagdish Bhagwati

## India in Transition

### Freeing the Economy

Oxford University Press, New York, NY, USA, 1993, x + 103 pp., $24.95 ($12.95 paper).

This monograph, based on the author's Radhakrishnan Lectures at Oxford in 1992, offers an unusually perceptive analysis of the political economy of India's checkered transition, by way of near bankruptcy, from an ill-conceived autarkic policy model to a market-friendly regime.

Ironically, Indian *dirigisme* has deep but little-known colonial roots. India, as the only part of the British Empire to which the principle of *laissez-faire* was never applied (vide Eric Hobsbawm) inherited the dubious legacy of Benthamite Utilitarianism, although subsequent refinements to the system were "wholly indigenous," as a British diplomat once wryly remarked. As Bhagwati notes, "India drew her policy ideas from Fabian politics and English economics, neither of which served her economy well," and even more from a peculiarly Luddite but "curried" brand of British trade unionism, graphically footnoted by the author as "overstaffing" and "overtime" even for workers of inoperative "sick units."

This Byzantine regulatory regime created a level and fertile playing field for all the principal rent-seeking interests—"the politicians who profit from corruption, the bureaucrats who enjoy the power, the businesses and the workers who like sheltered markets and squatters' rights." But, even more to the point, Bhagwati notes that "the central role of the economists..." and "their responsibility for India's failings cannot...be lightly dismissed...her splendid economists were both able and willing to rationalize every one of the outrageous policies that the government was adopting." India's problem was not market failure so much as the failure of policy economists to understand the market.

Equally acute is the author's appraisal of India's lackluster growth performance as reflecting a disappointing growth productivity performance rather than a low savings rate (in fact, the savings rate more than doubled, from roughly 10 percent to about 22 percent from 1950–84). Bhagwati ascribes this poor showing to extensive bureaucratic controls, inward-looking trade and foreign investment policies, and an inefficient public sector extending well beyond the confines of a conventional infrastructure, whose low profitability also amounted to a macroeconomic failure. To these he adds (citing Myron Weiner) India's high illiteracy rate—primary education is not yet compulsory despite "enabling" legislation—which contrasts with the close relationship between literacy and growth in the Far Eastern economies.

Bhagwati rightly reminds us that the structural reform conditionality of the IMF and the World Bank is no more than what he and several other Indian economists (including V.K. Ramaswami, T.N. Srinivasan, and Padma Desai) and some foreign economists (including Bela Balassa, Arnold Harberger, Anne Krueger, and Ian Little) "had long seen to be necessary." (Could one also add to this list the famously unremembered late B.R. Shenoy, who as early as the 1950s argued for economic liberalization in the face of much public and academic criticism?) Finally, Bhagwati pinpoints the reforms still needed—particularly fiscal adjustments, tariff reductions, and financial liberalization—if the now-liberalized private sector is to function with maximum efficiency.

While recognizing that there is no simple cross-country relationship between democracy and growth rates, Bhagwati rightly places India's economic performance "in the context of her political triumph in maintaining democracy and stability despite fissiparous multi-ethnicity" and "the zero-sum politics of acute scarcity."

This splendid volume is an elegant blend of unsparing, rigorous, and judicious reasoning, duly garnished with the author's characteristic puckish wit. With its distinctive resonances of Adam Smith, it ranks in the now-vanished grand tradition of classical political economy.

*Anand Chandavarkar*

---

Stanley Fischer, Dani Rodrik, and Elias Tuma (editors)

## The Economics of Middle East Peace

### Views from the Region

The MIT Press, Cambridge, MA, 1993, ix + 370 pp., $42.40.

This exceptionally timely book brings together a number of forward-looking papers prepared in late 1991 for a conference at Harvard University. With the hitherto unthinkable prospect of real peace between Arabs and Israelis at hand, this book offers current and diverse analyses by nearly 30 Middle Eastern economic specialists. Its minor weakness, which it shares with other edited works, is some inconsistency in focus, method, and quality.

Five chapters provide case studies on the potential benefits of peace to the economies of Egypt, Syria, Israel, Lebanon, and Jordan. Regional issues and the possible benefits from enhanced regional cooperation and trade are also addressed, and four chapters assess problems and prospects for future Palestinian economic development, including relations with Israel and Jordan. A common theme is that the potential benefits of peace will be realized only if that peace is comprehensive, real, and enduring, and if governments take the opportunity both to reduce security expenditures and to allocate at least part of that capital to productive investment, at the same time carrying out thorough macroeconomic and microeconomic reforms. This is an enormous agenda for most governments in the region and a substantial caveat to the potential for a peace dividend.

Unfortunately, the likelihood of a substantial peace dividend cannot be taken for granted. Egypt's experience since the 1979 Camp David Accord demonstrates that the benefits from more than a decade of peace with Israel have been modest. Heba Handoussa and Nemat Shafik argue that Egypt was penalized by other Arab countries because the peace was unilateral, but they also argue that comprehensive economic reform is a prerequisite to obtaining a real peace dividend. However, as Ishac Diwan and Nick Papandreou point out, although peace—and with it economic and political reforms—can bring substantial benefits, it may be perceived as a domestic threat to some regimes, lessening the external threat that has sometimes been used to justify repression and increasing demands for more internal freedom. Moreover, as John Waterbury—one of the few non-

economists in the volume—points out, the economic failures of the past have resulted not from economic variables alone but from the unfavorable political structures and regimes that dominate the Middle East as well. Unless basic changes are made in these political structures, the economic benefits of peace may not materialize.

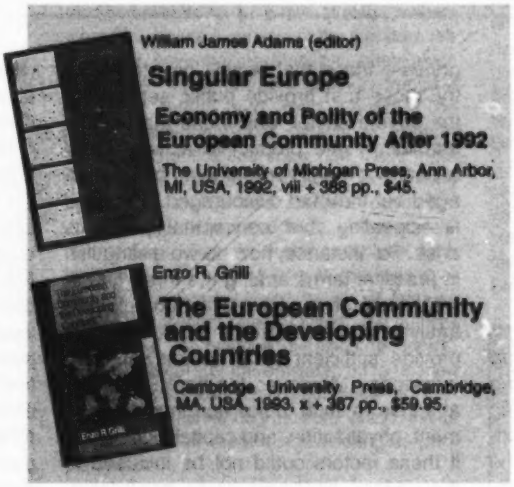
Said El-Naggar and Mohamed El-Erian argue that peace can lead to favorable growth in regional trade and integration. Such growth may, however, require changes outside the peace process. So far, regional integration and intraregional trade have failed to evolve, in part because of similarities between regional economies, inward-looking economic development policies in most states in the region, and sharp political cleavages not linked to the Arab-Israeli conflict. As for the Palestinian-Israeli-Jordanian axis, the political, social, and economic situation in Gaza and the West Bank has become unstable and unsustainable since the onset of the "Intifada." Whatever the ultimate outcome of the recent historic change in Palestinian-Israeli relations, the social and economic status quo, particularly in Gaza, is deplorable and demands improvement. On that at least, and on the need for an urgent improvement in the plight of Gaza's citizens, all participants seem to agree. And here, at least, change and progress may soon be at hand.

*Robert A. Mertz*

---

"Any attempt to predict the contours (let alone the details) of Europe's future must be considered brash," writes William James Adams. Accordingly, the intent of the papers in this compilation is to "reveal Europe's pulse," not to read its palm. But however mindful they may be of the risks inherent in the forecasting business, the authors of these papers are willing to accept as a given that Europe's route—despite the bumps, the backstepping and shuffling, and the unpredictability—leads ultimately to integration.

A number of steps still need to be taken toward European integration in the wake of Project 1992 (the Single Market). According to veteran Euro-observer Tomaso Padoa Schioppa, a single market will not work without monetary union, but fiscal union is not necessary as long as some degree of "federal" discipline can be brought to bear on national policies. Stephan Leibfried contemplates one of the European Community's (EC) "most prominent black holes—the social dimension" and provides some recipes for Europe's "could-be states of welfare."


William James Adams (editor)
Singular Europe
Economy and Polity of the European Community After 1992
The University of Michigan Press, Ann Arbor, MI, USA, 1992, viii + 368 pp., $45.
Enzo R. Grilli
The European Community and the Developing Countries
Cambridge University Press, Cambridge, MA, USA, 1993, x + 387 pp., $59.95.

Several papers look at European integration from the perspective of outsiders—those third parties that have been shut out of the EC compound and find themselves competing with "fortress Europe." William Wallace sees as inevitable the Community's growth in stature and influence on the world stage and its eventual sharing of top billing with the United States. Yet, according to John D. Steinbruner and Susan L. Woodward, the EC remains insular in outlook, scattering trade and regulatory roadblocks in the path of developing countries and blunting the zeal of the East European economies that are eager to jump on the free market bandwagon and willing to pay the price. John H. Jackson voices concern about the EC's role in the world market, particularly if protectionist trends in European trade policy and the EC's preoccupation with its "internal evolution" blind the Community to its key role in promoting global multilateralism.

Enzo R. Grilli puts the development cooperation activities of "fortress Europe" under the microscope and subjects them to a comprehensive and critical examination in *The European Community and the Developing Countries.* The EC is the world's largest trading bloc, and, taken together, EC countries provide the largest source of economic assistance to developing countries. Yet over the past 30 years, according to Grilli, the EC's development policy has been largely ad hoc and reactive, remaining stubbornly regional and localized, hostage to the historical baggage that its key members carted to Rome in 1957.

From the beginning, says Grilli, the EC has focused its development efforts on countries in Africa, the Caribbean, and the Pacific—"the direct and nearly inevitable product of the colonial experience of the member countries." The Treaty of Rome, which established the European Common Market, also conferred association status on existing and former colonial possessions of the member countries. But the political and economic conditions that may have made "EurAfrica" trade (raw materials in exchange for manufactures at preferential rates) inevitable 30 years ago have undergone radical change and the rationale for the policy may, in fact, never have been wholly valid to begin with. The mutual benefits that the EC and its favored associates have derived from this relationship are now, according to Grilli, largely symbolic. In the meantime, the Community may be losing out on opportunities in other parts of the world—in particular, Latin America and Eastern Europe.

EC development cooperation in the 1990s, although it has finally begun to take on a wider geographical and political dimension, is still being conducted along the old lines; the experience of the two previous decades is being repeated, and there is "no clear design, old or new, at its base." What is chiefly needed, according to Grilli, is a "more precise definition of the shared goals and priorities of EC development cooperation." Without such an understanding among the members of the Community, mere increases in flows of development aid or modifications to trade policies will have little effect in keeping the development effort alive and effective over the longer term.

*Sara Kane*

Jeffrey A. Frankel

## On Exchange Rates

The MIT Press, Cambridge, MA, USA, 1993, ix + 436 pp., $39.95.

This book is a collection of 17 papers (most of which have been published previously, either in academic journals or other conference volumes) written by a leading international economist. A number of them, written over the past 15 years or so, are landmarks in the literature on empirical exchange rate economics. Many of the policy issues raised in the papers (reform of the international monetary system, the extent of capital mobility among industrial countries, the effectiveness of foreign exchange market intervention, to name but a few) continue to be at center stage, making this collection of articles a timely contribution.

As the author notes in his preface, the unifying theme of the book is empirical international finance. The book is divided into four parts. The first, entitled "The Modern International Monetary System," has two chapters dealing respectively with the operation of floating exchange rates and the measurement of international capital mobility among the major industrial countries. Part II, "The Determination of Exchange Rate Movements," contains a number of Frankel's better known papers (including his "On the Mark: A Theory of Floating Exchange Rates Based on Real Interest Differentials") on modeling exchange rate movements in the tradition of the monetary and portfolio balance approaches. Chapter 6 contains an interesting discussion of exchange rate overvaluation (applied to the US dollar in the mid-1980s), while Chapter 7 ("Zen and the Art of Modern Macroeconomics: The Search for Perfect Nothingness") contains a lively critique of what Frankel refers to as the "random walkers and equilibrium theorists" of real exchange rate movements.

The third part of the book, which is perhaps a little more technical than the first two, deals with the risk premium in foreign exchange markets. As the author notes in his introduction, this is an important issue, not only for discriminating between monetary and portfolio balance models of exchange rates, but also for policymakers interested in such issues as the effectiveness of sterilized intervention. Finally, the last part of the book contains five articles on exchange rate expectations. The material here is a little more specialized than that covered elsewhere in the book, and deals with a number of issues including which models of exchange rate expectations are consistent with survey data.

On the whole, this book belongs in the library of anyone (be it from the policymaking or academic community) with an interest in exchange rate economics and the application of useful techniques for analyzing data from the foreign exchange markets.

*Jonathan D. Ostry*

---

A. Chhibber, M. Dailami, and N. Shafik (editors)

## Reviving Private Investment in Developing Countries

### Empirical Studies and Policy Lessons

North Holland, New York, NY, USA, 1992, vii + 245 pp., $89.50.

The broad conclusions of *Reviving Private Investment in Developing Countries* largely confirm prevailing assessments about the effects of government activities on private investment. The book—comprising an introductory chapter, seven individual country studies, and one cross-country analysis—provides considerable empirical support for current views in several areas. Among these are the adverse consequences of subsidized interest rates, the overall positive impact of reducing overvalued exchange rates to their equilibrium level, and the importance of policy predictability and stability in stimulating investment by clarifying expectations and diminishing uncertainty.

On the question of whether public investment "crowds out" private investment, the findings are less clear. In their introductory chapter, the editors classify public investment into three categories—"those that benefit private industry, those that provide public services to the private sector, and those that substitute for private productive activity"—and assert that the first two should be encouraged but the third discouraged. The logic is appealing, but conceptual problems arise. For instance, how do we distinguish in practical terms among the three and at what level of service? Unfortunately, the analysis presented in this book does not provide sufficient detail to answer such questions. Moreover, the book pays little attention to such topics as foreign investment, privatization, and capital flight. Even if these factors could not be included in the various analyses, some speculation on their importance would have been informative, particularly in light of the current mania over "emerging markets."

Nevertheless, this book is of significant interest on quite a few counts. First, the studies themselves offer technically sophisticated analyses that draw on explicit theoretical foundations. As always, quibbles could be raised about the suitability of a particular proxy, and the chanciness of some of the data calls for discretion in interpreting results. But these quirks are indeed one of the book's attractions. As several of the authors note, developing countries can present uncommon data problems, and the ingenuity with which these problems are addressed should prove useful to other analysts with similar concerns.

Several studies incorporate microeconomic aspects of investment behavior into the larger analysis, providing some interesting findings on the unexpected consequences of particular policy measures. For instance, the chapter on Colombia demonstrates how eliminating taxes on dividends—a move intended to shift corporate financing toward equity and away from debt—had precisely the opposite effect. Stockholders, fearing that the tax relief would be short lived, actually pushed companies to increase their dividend payouts. These high payouts, in turn, forced some companies to increase their reliance on debt financing. The outcome is perverse but entirely consistent with rational behavior on the part of individual investors, whose assessments of the present value of expected future cash flows were dominated by their apprehensions about policy instability and reversal.

Finally, the mix of countries analyzed and the inclusion of studies with contrary conditions or results make for enlightening reading. For example, it is reasonably well established that a currency devaluation tends to diminish investment in the short term but expand it over the medium term. One of the key issues for policymakers,

especially those operating in politically impatient environments, is the duration of the lag. Obviously, the lag can depend on many factors, and the studies of Indonesia and Morocco provide useful counterpoints between a country where it appeared to be about three years and another where it was much longer. In the same vein, several of the studies indicate that cost-of-capital considerations play an important role in stimulating or stifling investment; others find that capital cost is less important than simple availability.

Unfortunately, readers are left to draw most of these comparisons for themselves, as the editors have not provided a concluding chapter that ties together the individual studies. This lack is especially problematic, as several of the studies give substantially more emphasis to the display of advanced methodology than to the interpretation and policy implications of their results. Accordingly, the book is likely to hold greater appeal for analysts than for policymakers.

*Eugene M. Salorio*
*Assistant Professor*
*Georgetown University*

# BOOKS *in brief*

C. Fred Bergsten and Marcus Noland

## Reconcilable Differences?

### United States–Japan Economic Conflict

Institute for International Economics, Washington, DC, USA, 1993, 296 pp., $19.95.

If book titles are significant, then this one should be studied with care. In naming their work *Reconcilable Differences?*, Bergsten and Noland, both of the Institute for International Economics, chose neither *Reconcilable Differences* (too cheery) nor *Irreconcilable Differences?* (too glum); instead, they trod a delicate, intelligent middle course. The book's most impressive offering is its analytical survey of the sectoral and structural impediments to trade. By their own admission, the authors notably neglect the larger macroeconomic forces shaping recent trade imbalances. The end result is a mostly unjaundiced view of US–Japan economic conflicts and a useful collection of trade measures and policy arguments. And the bottom line? Both countries must do more, according to the authors: the United States must strengthen its commitment to debt reduction and increased saving and investment; Japan must liberalize its distribution networks and improve foreign access to its markets through better antitrust enforcement and removal of nontariff barriers.

David W. Pearce and Jeremy J. Warford

## World Without End

### Economics, Environment, and Sustainable Development

Published for the World Bank by Oxford University Press, New York, NY, USA, 1993, v + 440 pp., $39.95.

This comprehensive volume on environmental economics draws on a great deal of material, such as background papers and research conducted for the World Bank, that has not been readily available to the public. It also presents a more complete synthesis of the literature relevant for policymaking than has been given elsewhere, with great care taken to translate economic jargon into plain English. The authors take theoretical aspects of environmental economics and show how these theories can be applied to tropical forestry and agriculture, energy and industry, population and poverty, international trade, and the "global commons." Specific headings include such hotly debated topics as how to measure sustainable development and issues of fairness and time (discount rates). Overall, the authors argue that a balance between economic growth and care of the environment is needed in all nations—especially poor ones—to prevent environmental degradation, which results in lost economic output and endangers people's health.

Ismail Serageldin

## Development Partners

### Aid and Cooperation in the 1990s

Swedish International Development Authority, Stockholm, Sweden, 1993, iii + 153 pp. Available upon request.

At a time when countries are rethinking their relations in the post-Cold War climate, this volume cuts through the mist of knee-jerk generalities on foreign aid. It documents how external assistance can be made more efficient and effective in promoting economic and social development. It also examines the strategy needed to tackle what is probably the greatest development challenge of the 1990s: sub-Saharan Africa. The author, who is the World Bank's Vice President for Environmentally Sustainable Development, concludes that foreign aid—*if* carefully designed and monitored—is a necessary, although by no means sufficient, element in accelerating development and improving well-being, even in sub-Saharan Africa.

Credits: Cover art and art on pages 6, 11, 14, and 16: Luisa Watson. Art on pages 20, 26, 34, and 38: Mark Robinson. Art and charts on pages 24–25: Dale Glasgow. IMF photos: Denio Zara and Padraic Hughes-Reid. Bank photos: M. Iannacci.

**Correction**

In the article "Auctions: A Sampling of Techniques" in our September 1993 issue (page 32), it should have been said that several countries conducted discriminatory-price or Dutch auctions for refinance credit (Romania) and for foreign exchange (Bolivia, Ghana, Jamaica, and Zambia)—rather than indicating that these countries all used Dutch auctions.

**New readers** who wish to receive ***Finance & Development*** regularly should apply in writing to:

***Publications Services***
***Finance & Development***
***International Monetary Fund***
***Washington, D.C. 20431, USA***

Specify the language edition and briefly state the reasons for your request. The magazine is normally sent without charge by surface mail, but for faster service, air delivery is now available for US$20 (advance payment required). American Express, MasterCard, and Visa credit cards accepted.

# LETTERS

### The Road After Rio

I read with much interest "The Road From Rio," by Andrew Steer (*Finance & Development*, September 1992). The results of the UN Conference on Environment and Development (UNCED) have been judged in optimistic or pessimistic tones, depending on the pre-conference level of expectations. It is clear that even after Rio, the same vicious circles exist:

- In developing countries, illiteracy, too rapid population growth, poor health conditions, malnutrition, and inadequate use of human resources are mutually reinforcing negative factors.
- In developed countries, insufficient recognition of the impact of their own welfare in developing countries continues to play havoc with the good intentions expressed in Rio.

In the light of previous world conferences on such subjects as population, famine, and housing, it must be sadly concluded that without real commitments, especially financial, the "world conference method" is relatively inefficient. What should be done? A comprehensive set of measures, divorced as much as possible from political pressure and media attention, can offer hope for effective action. Specifically:

1. There should be an urgent negotiation to provide the necessary resources for a minimal program in the Third World, leading to "sustainable development." Rio once more made it clear that the formula to allocate 0.7 percent of a developed country's GNP for this purpose cannot be translated into firm commitments. There should, therefore, be agreement in principle, followed by detailed negotiation, on some form of "automatic taxation," for example, on arms transfers, telecommunications, or in some other form. The World Bank could be charged with calculating the total amount needed to assure a minimum of "sustainable development."

2. The UN Security Council should be allowed (without amending the UN Charter) to consider environmental and economic crises as threats to the peace under Article 39 of the UN Charter. Since alone among the international structures, the Security Council has the right to take measures binding upon nations, there would be a glimmer of hope that the present situation of nondecision making and delaying action would be replaced by real action.

Without some action along the lines sketched, the "clock of mankind" may be ticking toward a fatal hour from which there is no return!

*Johan Kaufmann*
*Former Netherlands Ambassador to the United Nations*
*The Hague*


*New from the International Monetary Fund!*

## *A Guide to Direction of Trade Statistics*

This handbook has been issued by the IMF to assist users of the IMF's direction of trade statistics data base. The *Guide* contains recommendations that form the basis for the direction of trade statements regularly made available by the IMF in its major statistical publications, *Direction of Trade Statistics* and *International Financial Statistics*.
vii + 25 pp. 1993.

$12.50. English. (paper) ISBN 1-55775-334-X **Stock #GDTSEA**
$12.50. French. (paper) ISBN 1-55775-345-8 **Stock #GDTSFA** *Forthcoming 1994*
$12.50. Spanish. (paper) ISBN 1-55775-346-6 **Stock #GDTSSA** *Forthcoming 1994*

***To order, please write or call:***
**International Monetary Fund**
Publication Services, Box FD-304
700 19th Street, N.W.
Washington, D.C. 20431 U.S.A.

Telephone: (202) 623-7430
Telefax: (202) 623-7201
Cable Address: INTERFUND
*American Express, MasterCard, and VISA credit cards accepted.*

# INDEX 1993 VOLUME 30

## Articles


**Masood Ahmed & Sudarshan Gooptu**, *Portfolio Investment Flows to Developing Countries*, March
**Asad Alam & Sarath Rajapatirana**, *Trade Reform in Latin America and The Caribbean*, September
**Dennis Anderson & Kulsum Ahmed**, *Where We Stand with Renewable Energy*, June
**Nancy Birdsall & Andrew Steer**, *Act Now on Global Warming—But Don't Cook the Books*, March
**José-Luis Bobadilla & Helen Saxenian**, *Designing an Essential National Health Package*, September
**Guillermo Calvo & Carlos Végh**, *Currency Substitution in High-Inflation Countries*, March
**Michael Cernea**, *The Sociologist's Approach to Sustainable Development*, December
**Ajay Chhibber & Chad Leechor**, *Ghana: 2000 and Beyond*, September
**Ke-Young Chu & Sanjeev Gupta**, *Protecting the Poor: Social Safety Nets During Transition*, June
**John Clark & Eliot Kalter**, *Recent Innovations in Debt Restructuring*, September
**William Cline**, *Give Greenhouse Abatement a Fair Chance*, March
**Michael Cohen**, *Megacities and the Environment*, June
**Nat Colletta & Nicole Ball**, *War to Peace Transition in Uganda*, June
**Hernán Cortés-Douglas & Richard Abrams**, *Introducing New National Currencies*, December
**Mohamed El-Erian & Shamsuddin Tareq**, *Structural Reforms in Arab Countries*, September
**William Easterly & Lant Pritchett**, *The Determinants of Economic Success: Luck and Policy*, December
**Robert Feldman & Rajnish Mehra**, *Auctions: A Sampling of Techniques*, September
**Jacob Frenkel**, *Top Economist Ponders a Changing World*, December
**Roman Frydman & Andrzej Rapaczynski**, *Privatization in Eastern Europe: Is the State Withering Away?* June
**J. Luis Guasch & Thomas Glaessner**, *The How and Why of Credit Auctions*, March
**Robert Hecht & Philip Musgrove**, *Rethinking the Government's Role in Health*, September
**Ian Hume & Brian Pinto**, *Prejudice and Fact in Poland's Industrial Transformation*, June
**Dean Jamison**, *Investing in Health*, September
**George Kopits**, *Reforming Social Security Systems*, June
**Pierre Landell-Mills**, *National Perspective Studies in Africa: A Vision of a Better Future*, December
**Timothy Lane**, *Can Market Forces Discipline Government Borrowing?* March
**Sérgio Pereira Leite**, *Coordinating Public Debt and Monetary Management*, March
**Bernhard Liese & Paramjit Sachdeva**, *Organizing Tropical Disease Control*, December
**Jennie Litvack & Christine Wallich**, *Intergovernmental Finance: Critical to Russia's Transformation?* June
**Paul Masson**, *Policy Coordination: How Is It Affected by Uncertainty?* December
**Rachel McCulloch**, *Foreign Direct Investment in the United States*, March
**Constantine Michalopoulos & David Tarr**, *Energizing Trade of the States of the Former USSR*, March
**Robert Miller**, *Determinants of US Manufacturing Investment Abroad*, March
**Stephen Mink**, *Poverty and the Environment*, December
**Abbas Mirakhor & Delano Villanueva**, *Interest Rate Policies in Developing Countries*, December
**Peter Montiel & Jonathan Ostry**, *Targeting the Real Exchange Rate in Developing Countries*, March
**Mohan Munasinghe**, *The Economist's Approach to Sustainable Development*, December
**Mohan Munasinghe, Wilfrido Cruz, & Jeremy Warford**, *Are Economywide Policies Good for the Environment?* September
**Saleh Nsouli**, *Structural Adjustment in Sub-Saharan Africa*, September
**Michael Papaioannou & Lawrence Duke**, *The Internationalization of Emerging Equity Markets*, September
**Sanjay Pradhan & Vinaya Swaroop**, *Public Spending and Adjustment*, September
**Peter Quirk & Hernán Cortés-Douglas**, *The Experience with Floating Rates*, June
**Colin Rees**, *The Ecologist's Approach to Sustainable Development*, December
**Einars Repse**, *"Be Ready To Be Blamed for Everything": How Latvia Introduced Its Currency*, December
**Miguel Schloss**, *Does Petroleum Procurement and Trade Matter?* March
**Gerd Schwartz & Paulo Silva Lopes**, *Privatization: Expectations, Trade-offs, and Results*, June
**Ismail Serageldin**, *Making Development Sustainable*, December
**Grant Spencer & Adrienne Cheasty**, *The Ruble Area: A Breaking of Old Ties?* June
**Andrew Steer & Ernst Lutz**, *Measuring Environmentally Sustainable Development*, December
**Jee-Peng Tan & Kenneth Hill**, *The Foundation for Better Health*, September
**George Tavlas**, *The Theory of Optimum Currency Areas Revisited*, June
**Laura Wallace**, *Discounting Our Descendants? An Introduction*, March
***A First Look at Financial Programming***, March
***Military Expenditures: Will the Post-1985 Decline be Sustained?*** December


## Book Reviews


**William James Adams, editor**, *Singular Europe: Economy and Polity of the European Community After 1992*, reviewed by Sara Kane, December
**Etisham Ahmad and Nicholas Stern**, *The Theory and Practice of Tax Reform in Developing Countries*, reviewed by Alan Tait, September
**Anthony B. Atkinson and John Micklewright**, *Economic Transformation in Eastern Europe and the Distribution of Income*, reviewed by Branko Milanovic, September
**Jagdish Bhagwati**, *India in Transition: Freeing the Economy*, reviewed by Anand Chandavarkar, December
**Richard M. Bird**, *Tax Policy and Economic Development*, reviewed by Alan Tait, September
**Jesmond Blumenfeld**, *Economic Interdependence in Southern Africa*, reviewed by Tamim Bayoumi, March
**Matthew B. Canzoneri, Vittorio Grilli, and Paul R. Masson, editors**, *Establishing a Central Bank*, reviewed by Karl Habermeier, September
**Eliana Cardoso and Ann Helwege**, *Cuba After Communism*, reviewed by Erich Spitaeller, June
**A. Chhibber, M. Dailami, and N. Shafik, editors**, *Reviving Private Investment in Developing Countries*, reviewed by Eugene M. Salorio, December
**Christopher Clague and Gordon Rausser, editors**, *The Emergence of Market Economies in Eastern Europe*, reviewed by Thomas Wolf, September
**Edward Clay and Olav Stokke, editors**, *Food Aid Reconsidered*, reviewed by Pierre Landell-Mills, September
**Christopher Colclough and James Manor, editors**, *States or Markets?* reviewed by Martin Ravallion, March
**Partha Dasgupta**, *An Inquiry Into Well-Being and Destitution*, reviewed by Vinod Thomas, December
**Michael Ellman, Egor Gaidar, and Grzegorz Kolodko**, *Economic Transition in Eastern Europe*, reviewed by Thomas Wolf, September
**Stanley Fischer, Dani Rodrik, and Elias Tuma, editors**, *The Economics of Middle East Peace: Views from the Region*, reviewed by Robert A. Mertz, December
**Jeffrey A. Frankel**, *On Exchange Rates*, reviewed by Jonathan D. Ostry, December
**Jacob A. Frenkel, Assaf Razin, and Efraim Sadka**, *International Taxation in an Integrated World*, reviewed by Alan Tait, September
**Enzo R. Grilli**, *The European Community and the Developing Countries*, reviewed by Sara Kane, December
**Gene M. Grossman and Elhanan Helpman**, *Innovation and Growth in the Global Economy*, reviewed by Gregory Ingram, March
**Stephan Haggard and Robert R. Kaufman, editors**, *The Politics of Economic Adjustment*, reviewed by Azizali Mohammed, March
**Gerald K. Helleiner, editor**, *Trade Policy, Industrialization, and Development*, reviewed by Patrick Low, March
**Thomas B. Johansson *et al.***, *Renewable Energy: Sources for Fuels and Electricity*, reviewed by Kenneth King, June
**Michael Karen and Gur Ofer, editors**, *Economic Reform in the Former Communist Bloc*, reviewed by Thomas Wolf, September
**Andras Köves**, *Central and East European Economies in Transition*, reviewed by Thomas Wolf, September
**Paul Krugman and Marcus Miller, editors**, *Exchange Rate Targets and Currency Bands*, reviewed by Karl Driessen, March
**Nora Lustig, Barry P. Bosworth, and Robert Z. Lawrence, editors**, *North American Free Trade*, reviewed by John Nash, June
**Donald G. Moggridge**, *Maynard Keynes. An Economist's Biography*, reviewed by Anand Chandavarkar, September
**Moises Naïm**, *Paper Tigers & Minotaurs*, reviewed by Guy Pfeffermann, September
**Alice M. Rivlin**, *Reviving the American Dream*, reviewed by Rozlyn Coleman, March
**Julian L. Simon**, *Population and Development in Poor Countries*, reviewed by William McGreevey, June
**Robert Skidelsky**, *John Maynard Keynes, The Economist as Saviour, 1920-1937, A Biography*, reviewed by Anand Chandavarkar, September
**Laura d'Andrea Tyson**, *Who's Bashing Whom?* reviewed by J. Michael Finger, June
**Robert Wade**, *Governing the Market*, reviewed by Brian Levy, March
**Michael C. Williams**, *Vietnam at the Crossroads*, reviewed by Vikram Khanna, June

World Bank

# Launches Two Analytical Quarterly Newsletters

Two timely quarterly reports from the World Bank's International Economics Department offer data and analyses on the international financial and commodity markets.

CHARTER RATE
25% DISCOUNT

## FLOWS AND THE DEVELOPING COUNTRIES

Now financial decisionmakers have access to the World Bank's timely, accurate, and concise analyses of developing country debt and international financial flows with this new subscription newsletter.

Each quarterly issue examines the latest events and trends affecting developing country access to international capital. Subscribers will have a comprehensive – and ongoing – review of external financial flows.

Regular features include

- International Lending and Capital Markets
- Equity Portfolio and Foreign Direct Investment
- Secondary Markets for Debt
- Bilateral and Multilateral Official Capital Flows
- Debt Relief Update
- Commercial Bank Provisioning and Capital Adequacy
- Financial Brief

A statistical appendix with some 18 tables provides invaluable time-series data on external debt, foreign direct investment, commercial bank claims on developing countries, secondary market price of developing country debt, funds and loans raised on international capital markets, and more.

*Approximately 40 pages / ISSN 1020-0975 / Charter Issue November 1993 / Annual Subscription ~~$150.00~~ /*
***Charter Rate $112.50***

## COMMODITY MARKETS AND THE DEVELOPING COUNTRIES

This new review discusses recent developments in 34 primary commodity markets and their likely impact on prices.

World Bank trade analysts look at production, consumption, and trade patterns to pinpoint why some commodities should thrive while others may falter. Each issue provides succinct – yet substantive – assessments that keep readers abreast of the current market climate for

- Food
- Agricultural Raw Materials
- Metals and Minerals
- Energy
- Fertilizer

*Approximately 24 pages / ISSN 1020-0967 / Charter Issue December 1993 / Annual Subscription ~~$150.00~~ /*
***Charter Rate $112.50***

☐ **YES,** please enter my subscription for the new World Bank quarterlies indicated:

- ☐ **Financial Flows and the Developing Countries** *US$112.50/year*
- ☐ **Commodity Markets and the Developing Countries** *US$112.50/year*

☐ **NO,** I do not wish to subscribe at this time. I would, however, like to learn more about the above titles. Please send me your subscription brochure.

**Check method of payment:**

☐ Enclosed is my check for US$ _____ drawn on a US bank and payable to the World Bank in US Dollars.

☐ Enclosed is my check for the equivalent of US$ _____ drawn on a local bank and payable to the World Bank in local currency.

☐ Charge my ☐ VISA ☐ MasterCard ☐ American Express

_____
Credit card account number

_____
Expiration Date Signature

☐ Bill my organization. Institutional customers only. Please include purchase order.

**Please print or type:**

Name _____

Organization _____

Address _____

City _____

State _____ Zip _____

Country _____

Please return this completed coupon with payment to:
**The World Bank, P.O. Box 7247-7956,**

Courtesy of Finance & Development